



January 27, 2011

Mr. Carl Spadaro  
Pennsylvania Department of Environmental Protection  
400 Waterfront Drive  
Pittsburgh, Pennsylvania 15222-4745

Dear Mr. Spadaro:

Subject: Transmittal  
2010 Annual Leachate Management Report  
Old Waste and Western Disposal Areas  
Kelly Run Sanitation, Inc.  
CEC Project 101-062

On behalf of Waste Management, Civil & Environmental Consultants, Inc. is submitting the enclosed 2010 Annual Leachate Management Report for the Old Waste and Western Disposal Areas at Kelly Run Sanitation, Inc. in Forward Township, Allegheny County, Pennsylvania.

Please call Tom Pullet at (412) 384-7569 if you have any questions.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Bernard A. Lambie  
Project Scientist

Robert C. Dlugos, P.G.  
Project Manager

BAL:RCD/jg  
Enclosure

cc: Tom Pullet – Kelly Run

L-101062.Jan27/P

Civil & Environmental Consultants, Inc.

Export 4000 Triangle Lane  
Suite 200  
Export, Pennsylvania 15632  
Phone 724/327-5200  
Fax 724/327-5280  
Toll Free 800/899-3610  
E-mail export@cecinc.com

Pittsburgh 800/365-2324  
Chicago 877/963-6026  
Cincinnati 800/759-5614  
Cleveland 866/507-2324  
Columbus 888/598-6808

Detroit 866/380-2324  
Indianapolis 877/746-0749  
Nashville 800/763-2326  
Phoenix 877/231-2324  
St. Louis 866/250-3679



**2010 ANNUAL LEACHATE MANAGEMENT REPORT  
OLD WASTE AND WESTERN DISPOSAL AREAS**

**Prepared For:**

**KELLY RUN SANITATION, INC.  
FORWARD TOWNSHIP, ALLEGHENY COUNTY, PENNSYLVANIA**

**Prepared By:**

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
EXPORT, PENNSYLVANIA**

**CEC Project 101-062**

**January 2011**



## TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction.....	1
1.1 Site Description.....	1
2.0 Leachate Recovery and Management.....	3
2.1 Recovery, Treatment, and Offsite Disposal.....	3
2.2 Leachate Extraction System Operation and Maintenance .....	3
2.3 Old Waste Area.....	3
2.3.1 Operation and Leachate Levels.....	3
2.3.2 Production Rate and Volume Produced.....	4
2.4 Western Disposal Area .....	4
2.4.1 Operation and Leachate Levels.....	4
2.4.2 Production Rate and Volume Produced.....	5
2.5 Benwood Limestone Water Bearing Zone (WBZ) Recovery Operations .....	5
2.5.1 Remediation of the Benwood Limestone WBZ.....	6
3.0 Leachate Elevations .....	9
4.0 Corrective Action Program Groundwater Monitoring.....	10
4.1 Monitoring Program.....	11
4.1.1 Quarterly, Semi-Annual, and Annual Monitoring Parameters and Wells .....	11
5.0 Groundwater Contour Maps .....	13
6.0 Conclusions and Recommendations .....	14

## TABLES

- Table 1 - Leachate Elevations Old Waste Area
- Table 2 - Summary of Leachate Production Old Waste Area
- Table 3 - Leachate Elevations Western Disposal Area
- Table 4 - Summary of Leachate Production Western Disposal Area
- Table 5 - Selected Constituents from the Benwood Limestone WBZ Monitoring Wells
- Table 6 - Table IV-1 Quarterly, Semi-Annual, and Annual Groundwater Monitoring Parameters



## FIGURES

- Figure 1A - Old Waste Area - Leachate Elevation Trend
- Figure 1B - Old Waste Area - Leachate Elevation Trend
- Figure 2 - Old Waste Area - Leachate Recovery Trend
- Figure 3 - Western Disposal Area - Leachate Elevation Trend Data
- Figure 4 - Western Disposal Area - Leachate Recovery Trend
- Figure 5A - Benwood Limestone Monitoring Wells - Benzene Concentration Profile
- Figure 5B - Benwood Limestone Monitoring Wells - Xylene Concentration Profile
- Figure 5C - Benwood Limestone Monitoring Wells - Ethylbenzene Concentration Profile
- Figure 5D - Benwood Limestone Monitoring Wells - Naphthalene Concentration Profile
- Figure 6A - Liquid Elevation (March 11, 2010)
- Figure 6B - Liquid Elevation (June 23, 2010)
- Figure 6C - Liquid Elevation (September 29, 2010)
- Figure 6D - Liquid Elevation (December 16, 2010)

## APPENDICES

- Appendix A - Operation and Maintenance Forms
- Appendix B - Pulse Counter Readings - Old Waste Area and Western Disposal Area Wells
- Appendix C - Leachate Elevation Trend Charts
- Appendix D - Benwood Limestone (Figure 2) and Pittsburgh Coal (Figure 3) Potentiometric Maps  
(from Annual Groundwater Monitoring Event – Report Submitted Separately)
- Appendix E - Groundwater Monitoring Well Control Charts



## 1.0 INTRODUCTION

The following is a summary and evaluation of the Leachate Management Plan for Kelly Run Sanitation, Inc. (Kelly Run) located in Forward Township, Allegheny County, Pennsylvania for the calendar year ending January 31, 2010. Following the court approved May 10, 1996 Consent Decree No. 356 M.D. 1995 (Consent Decree) issued by the Commonwealth of Pennsylvania, Department of Environmental Protection (PADEP), Kelly Run has submitted quarterly progress reports. On August 14, 2006, the PADEP issued Kelly Run Sanitation Solid Waste Permit No. PAD004810222, which requires the submission of an annual leachate management report by January 31<sup>st</sup> of each year. The Consent Decree specifies that Kelly Run submit the following items:

- The volume of leachate removed from leachate recovery wells in the Old Waste Area (OWA) (OW-1 through OW-7) and WDA (W-3, W-4, W-8, W-12, W-14, W-15, and W-18), and the Benwood Aquifer recovery well MW-303R, including documentation of leachate extraction well conditions and repairs;
- The liquid elevation for leachate wells including recovery wells in the OWA and the WDA, including MW-303R; and
- The quarterly laboratory analyses from the Compliance Monitoring System and the Post-Closure Compliance Monitoring System.

### 1.1 SITE DESCRIPTION

Kelly Run operates a permitted landfill located in Forward Township, Allegheny County, Pennsylvania, which includes the following:



- A 17-acre closed and capped pre-RCRA disposal area designated as the OWA;
- A closed and capped municipal waste landfill designated as the Phase I Disposal Area;
- A closed and capped municipal waste landfill designated as the Phase II Disposal Area;
- A closed and capped 35-acre hazardous waste landfill designated as the WDA; and
- An active municipal waste landfill designated as the Phase III Disposal Area.



## **2.0 LEACHATE RECOVERY AND MANAGEMENT**

### **2.1 RECOVERY, TREATMENT, AND OFFSITE DISPOSAL**

Leachate from Kelly Run is collected and then discharged via sewer connection to the Elizabeth Borough Municipal Authority Wastewater Treatment Facility (EBMA). Kelly Run reports to Forward Township the total amount of leachate discharged to the EBMA on a monthly basis.

### **2.2 LEACHATE EXTRACTION SYSTEM OPERATION AND MAINTENANCE**

The leachate pneumatic pumping network is a controllerless system that pumps on demand. Thus, maintenance of the system is geared to keeping the pumps submerged and free of accumulated suspended solids that can clog pump intakes. To ensure continued operation, pump cycle counters are read and recorded for all extraction wells. Any well exhibiting lower than anticipated yield (based upon cycle counter readings) is checked for operational problems. Operational maintenance is typically performed by Civil & Environmental Consultants, Inc. (CEC) on a monthly and quarterly basis, and consists of adjusting the pump settings relative to leachate levels, cleaning pumps of solids, checking air supply and discharge lines, and recording liquid elevations at each well. Appendix A contains Operation and Maintenance forms for the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarters of 2010.

### **2.3 OLD WASTE AREA**

#### **2.3.1 Operation and Leachate Levels**

Leachate generated in the OWA is currently recovered through the use of pneumatic pumps installed in five gas/leachate extraction wells identified as OW-1, OW-2, OW-3, OW-5, and OW-7. Pumps in wells OW-4 and OW-6 were not in operation during 2010. As documented in Appendix A, attempts made to remove and service these pumps have not been successful to date; however, more than sufficient production from the OWA has been achieved from the remaining



Old Waste Area wells. Production totals for 2010 are significantly higher than the required production quota. A summary of leachate elevations for the OWA is presented in Table 1. Charts of leachate elevations plotted with time are presented on Figures 1A and 1B.

### 2.3.2 Production Rate and Volume Produced

The volume of leachate produced in 2010 from the five (OW-1, OW-2, OW-3, OW-5, and OW-7) operational leachate extraction wells of the seven existing OWA wells averaged 4,093 gallons, 2,372 gallons, 2,279 gallons, 64 gallons, and 306 gallons per day, respectively. The total leachate production from the operational OWA wells during 2010 was 3,354,550 gallons (Table 2). Quarterly leachate recovery rates from February 2000 through 2007 were submitted in the 2007 Annual Leachate Management Report on Figures 2A and 2B. Quarterly leachate recovery rates from March 2007 through present are plotted on the enclosed Figure 2. Pulse counter readings from each extraction well are presented in Appendix B.

## 2.4 WESTERN DISPOSAL AREA

### 2.4.1 Operation and Leachate Levels

Leachate generated in the WDA is currently recovered through the use of pneumatic pumps installed in gas/leachate extraction wells. Pumps were operational in wells W-1, W-15, W-18, and W-19 during 2010. Leachate extraction wells W-2, W-3, W-8, W-14, and W-20 are not used for extraction due to historical problems with product that enters the well while pumping, which subsequently causes the pumps to clog. W-12 is not used for extraction since the pump is unable to be removed from the well for repair. Periodically, during maintenance checks, technicians from CEC will move pumps from one extraction well to another based upon leachate level measurements or due to other issues associated with the leachate well integrity in order to enhance leachate extraction. A summary of the leachate elevations are displayed on Table 3.



#### 2.4.2 Production Rate and Volume Produced

The volume of leachate produced in the 1<sup>st</sup> Quarter 2010 from the four operational leachate extraction wells (W-1, W-15, W-18, and W-19) at the WDA averaged 429 gallons per day. During the 2<sup>nd</sup> Quarter 2010, the volume of leachate produced from W-1, W-15, and W-18 averaged 262 gallons per day. During the 3<sup>rd</sup> Quarter 2010, the volume of leachate produced from W-1, W-15, and W-18 averaged 259 gallons per day. During the 4<sup>th</sup> Quarter 2010, the volume of leachate produced from W-1, W-15, and W-18 averaged 628 gallons per day. Total leachate production from the operational WDA wells totaled 39,067 gallons during the 1<sup>st</sup> Quarter, 23,841 gallons during the 2<sup>nd</sup> Quarter, 23,594 gallons during the 3<sup>rd</sup> Quarter, and 69,911 gallons during the 4<sup>th</sup> Quarter. Enhanced maintenance efforts initiated during the second half of 2009 resulted in an increase in leachate production in the WDA wells. These efforts will be maintained to maximize production of leachate at these wells. Pulse counter readings from each extraction well are presented in Appendix B.

#### 2.5 BENWOOD LIMESTONE WATER BEARING ZONE (WBZ) RECOVERY OPERATIONS

A QED pneumatic pump is installed in the Benwood recovery well (MW-303R). The pump is actuated by a timer and is set to pump at 0.5 gallons per minute on a continual basis. The pump in MW-303R became inoperable in September of 2009. CEC personnel installed a replacement QED pneumatic bladder pump on September 29, 2010. The pump was calibrated to pump at a rate of 0.5 gallons per minute. The pump has continued to operate properly since installation and recovered 28,080 gallons of water during the 4<sup>th</sup> Quarter of 2010. The function of this pump will continued to be monitored each month, and the flow rate adjusted based on water levels.



### 2.5.1 Remediation of the Benwood Limestone WBZ

Groundwater extraction in the Benwood Limestone Water Bearing Zone (WBZ) (i.e., 300 series wells) has been taking place since the installation of recovery well MW-303 (May 1996) and the subsequent replacement well MW-303R in September 1997. Since the installation of the well, consecutive quarterly groundwater samples have been collected from MW-303R with results summarized in Table 5. Laboratory results from the Benwood WBZ monitoring wells from 2010 groundwater sampling events indicate the following:

- Benzene was detected in groundwater from MW-302 at a concentration of 44.4  $\mu\text{g/L}$  during the 1<sup>st</sup> Quarter of 2010, at a concentration of 10.9  $\mu\text{g/L}$  during the 2<sup>nd</sup> Quarter event, at a concentration of 49.5  $\mu\text{g/L}$  during the 3<sup>rd</sup> Quarter, and at a concentration of 35.1  $\mu\text{g/L}$  during the 4<sup>th</sup> Quarter;
- Benzene was detected in groundwater from MW-303R during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarters of 2010 at concentrations of 11  $\mu\text{g/L}$ , 112  $\mu\text{g/L}$ , 52  $\mu\text{g/L}$ , and 10  $\mu\text{g/L}$  respectively;
- Benzene was not detected above method detection limits for the remaining Benwood WBZ wells throughout 2010;
- The Benwood WBZ monitoring well MW-306D was abandoned to facilitate the Phase IIIB expansion at Kelly Run. The monitoring well was abandoned in accordance with conditions of the August 14, 2006 Permit. The well was abandoned with oversight provided by CEC. The well abandonment certification report was submitted to Mr. Carl Spadaro of the PADEP on June 27, 2007;
- Total xylenes (Figure 5B) were not detected in any groundwater samples from any Benwood WBZ wells during the 2010 calendar year;



- Ethylbenzene (Figure 5C) was detected in groundwater from MW-302 at a concentration of 6.2 µg/L during the 1<sup>st</sup> Quarter of 2010 and at a concentration of 5.9 µg/L during the 3<sup>rd</sup> Quarter of 2010. Ethylbenzene was also detected in groundwater at a concentration of 11.1 µg/L during the 2<sup>nd</sup> Quarter of 2010 at MW-303R. Ethylbenzene was not detected above method detection limits in the remaining Benwood WBZ wells during 2010;
- Naphthalene (Figure 5D) was detected in groundwater from MW-302 during the 1<sup>st</sup> Quarter 2010 at a concentration of 5.7 µg/L. Naphthalene was not detected in any other samples from any Benwood WBZ wells during the 2010 calendar year;
- Phenolics were detected in groundwater from MW-302R at a concentration of 29 µg/L during the 1<sup>st</sup> Quarter 2010 and at a concentration of 83 µg/L during the 4<sup>th</sup> Quarter 2010. Phenolics were also detected at concentrations of 31 µg/L and 21 µg/L during the 1<sup>st</sup> and 2<sup>nd</sup> Quarters of 2010, respectively, at MW-312R. The remaining WBZ wells were below method detection limits during the 2010 calendar year;
- Sulfate was detected in groundwater from MW-204, MW-211R1, MW-301R, MW-303R, MW-304, and MW-P2U during the 1<sup>st</sup> Quarter of 2010, at MW-204, MW-211R1, MW-301, and MW-304 during the 2<sup>nd</sup> Quarter of 2010, at MW-204, MW-211R1, MW-303R, MW-304, and MW-310R during the 3<sup>rd</sup> Quarter of 2010, and at MW-204, MW-211R1, and MW-304 during the 4<sup>th</sup> Quarter of 2010. Sulfate was below method detection limits at the remaining monitoring locations during the 2010; and
- Control charts created for each well are used to evaluate indicator parameters without permit specified concentration limits including total organic halides, specific conductance, total organic carbon, sodium, and phenols (creosote). A review of the control charts included in Appendix E indicates each parameter is within the



95 percent upper and lower control limits for the 2010 calendar year at each well except phenols at MW-302R and MW-312R. However, it should be noted that the control charts for phenols include mostly non-detect values which results in exceedances of the 95 percent upper control limit by low level detections. There have been sporadic low level detections at MW-302R since March 2007. There have been three detections of phenol at MW-312R since 2001, including those noted during the 1<sup>st</sup> and 2<sup>nd</sup> Quarters of 2010.



### 3.0 LEACHATE ELEVATIONS

Tables 1 and 3 provide a summary of historic and current leachate elevation data reported each quarter at Kelly Run. With respect to leachate/perched water elevation in the WDA, it is apparent that the water level elevations are lower following nine years of groundwater/leachate extraction and capping of the landfill. Leachate elevation trend charts plotted versus time show a negative slope corresponding to the decreasing leachate elevations in the respective well. Plots of leachate elevations versus time with trend lines for WDA wells W-1, W-2, W-8, W-14, and W-18 and OWA wells OW-1, OW-2, OW-3, and OW-5 are presented in Appendix C.



#### 4.0 CORRECTIVE ACTION PROGRAM GROUNDWATER MONITORING

The August 14, 2006 Permit for Hazardous Waste Facility Post Closure (Permit No. PAD004810222) defines the Groundwater Monitoring System for the Kelly Run facility to consist of the following monitoring points for the respective groundwater zone:

##### Benwood Limestone

- MW-301R (upgradient);
- W-302R;
- MW-303R;
- MW-304;
- MW-307;
- MW-310R;
- MW-311D;
- MW-312R;
- MW-PZ-1;
- MW-PZ-2; and
- MW-PZ-3.

##### Pittsburgh Coal

- MW-201R (upgradient);
- MW-204;
- MW-211R1; and
- MW-P2U.



## 4.1 MONITORING PROGRAM

### 4.1.1 Quarterly, Semi-Annual, and Annual Monitoring Parameters and Wells

The Benwood Limestone WBZ groundwater monitoring compliance monitoring system points are to be analyzed for the parameters listed on Table 6. Table 6 summarizes the quarterly, semi-annual, and annual sampling points with their respective analytical requirements in addition to surface water sampling points for the Kelly Run facility.

The Post-Closure Compliance Monitoring System monitoring system consists of the following monitoring points:

#### Groundwater

- MW-201R;
- MW-204;
- MW-211R1;
- MW-301R;
- MW-302;
- MW-303R;
- MW-304;
- MW-307;
- MW-310R;
- MW-311;
- MW-312;
- PZ-1;
- PZ-2;
- PZ-3; and
- MW-P2U.



### Surface Water

- SP-1;
- SP-2;
- SP-3;
- SP-4;
- SP-5;
- SP-6;
- SP-8;
- SP-10;
- SP-11;
- KR-1;
- SS-1;
- SS-2; and
- SS-3.

During the sampling of groundwater from the compliance monitoring system points, Beran Environmental Services (BES) personnel reported that wells MW-210R and MW-310R were dry during the 1<sup>st</sup> Quarter of 2010, wells MW-201, MW-P2U, and MW-310R were dry during the 2<sup>nd</sup> Quarter of 2010, wells MW-201, MW-P2U, MW-301R, and MW-310R were dry during the 3<sup>rd</sup> Quarter of 2010, and wells MW-201, MW-P2U, MW-301R, and MW-310R were dry during the 4<sup>th</sup> Quarter of 2010.

During the sampling of surface water from the compliance monitoring system points, BES personnel reported that surface water monitoring point SP-4 was dry during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarters of 2010. Surface water monitoring point KR-2 was also dry during the 3<sup>rd</sup> Quarter 2010 sampling event. These sampling points will be monitored for the reoccurrence of surface water.

The 2010 groundwater sampling data (Form 19s) are submitted separately as part of the quarterly reporting requirements for the site.



## 5.0 GROUNDWATER CONTOUR MAPS

Potentiometric surface maps were prepared by CEC for the Benwood Limestone WBZ and the Pittsburgh Coal WBZ based on groundwater elevations measured on March 8<sup>th</sup> through 10<sup>th</sup> and May 4<sup>th</sup> through 6<sup>th</sup>, respectively. The Benwood Limestone WBZ and the Pittsburgh Coal WBZ potentiometric maps are presented in Appendix D.

Measurements by CEC determined that groundwater flow in the Benwood WBZ on March 8<sup>th</sup> through 10<sup>th</sup> was toward the southeast at a gradient of 0.0081 feet per foot (ft/ft) with a velocity of 0.262 feet per day (ft/day) or 95.6 feet per year (ft/yr). This groundwater flow direction is consistent with previous observations at the site in the Benwood WBZ.

Measurements by CEC determined that groundwater flow in the Pittsburgh Coal WBZ on May 4<sup>th</sup> through 6<sup>th</sup> was toward the southeast at a gradient of 0.009 ft/ft with a velocity of 0.189 ft/day or 69 ft/yr. This groundwater flow direction is consistent with previous observations at the site in the Pittsburgh Coal WBZ.



## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The total leachate production from the operational OWA wells during 2010 was 3,354,550 gallons. The total leachate produced from the operational WDA wells was 156,413 gallons during 2010. Both represent an increase in production from the previous two years.

During the sampling of groundwater from the compliance monitoring system points, BES personnel reported that wells MW-210R and MW-310R were dry during the 1<sup>st</sup> Quarter of 2010, wells MW-201, MW-P2U, and MW-310R were dry during the 2<sup>nd</sup> Quarter of 2010, wells MW-201, MW-P2U, MW-301R, and MW-310R were dry during the 3<sup>rd</sup> Quarter of 2010, and wells MW-201, MW-P2U, MW-301R, and MW-310R were dry during the 4<sup>th</sup> Quarter of 2010.

During the sampling of surface water from the compliance monitoring system points, BES personnel reported that surface water monitoring point SP-4 was dry during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarters of 2010. Surface water monitoring point KR-2 was also dry during the 3<sup>rd</sup> Quarter 2010 sampling event. These sampling points will be monitored for the reoccurrence of surface water.

Benzene was detected in groundwater from MW-302 at a concentration of 44.4 µg/L during the 1<sup>st</sup> Quarter of 2010, at a concentration of 10.9 µg/L during the 2<sup>nd</sup> Quarter event, at a concentration of 49.5 µg/L during the 3<sup>rd</sup> Quarter, and at a concentration of 35.1 µg/L during the 4<sup>th</sup> Quarter. These concentrations are consistent with historical data.

Benzene was detected in groundwater from MW-303R during the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarters of 2010 at concentrations of 11 µg/L, 112 µg/L, 52 µg/L, and 10 µg/L, respectively. These concentrations are consistent with historical data.

Total xylenes (Figure 5B) were not detected in any groundwater samples from any Benwood WBZ wells during 2010.



Ethylbenzene (Figure 5C) was detected in groundwater from MW-302 at a concentration of 6.2 µg/L during the 1<sup>st</sup> Quarter of 2010 and at a concentration of 5.9 µg/L during the 3<sup>rd</sup> Quarter of 2010. Ethylbenzene was also detected in groundwater at a concentration of 11.1 µg/L during the 2<sup>nd</sup> Quarter of 2010 at MW-303R. Ethylbenzene was not detected above method detection limits in the remaining Benwood WBZ wells during 2010.

Naphthalene (Figure 5D) was detected in groundwater from MW-302 during the 1<sup>st</sup> Quarter 2010 at a concentration of 5.7 µg/L. Naphthalene was not detected in any other samples from any Benwood WBZ wells during the 2010 calendar year.

Control charts of indicator parameters without permit specified concentration limits, including total organic halides, specific conductance, total organic carbon, sodium, and phenols (creosote), indicate each parameter is within the 95 percent upper and lower control limits for the 2010 calendar year at each well except phenols at MW-302R and MW-312R. However, the 95 percent control limits for phenol at both locations are influenced by mostly non-detect values and the recent detections are consistent with historically sporadic low-level detections of phenols at these wells.

The results of this annual leachate management report indicate that several operational problems observed throughout the first half of 2009 have been remedied by increased pump maintenance and repair. There has been a significant improvement in overall leachate production in both the OWA and WDA since the initiation of the pump maintenance. The volume of leachate that has been recovered in the 2010 calendar is significantly higher than the leachate volume quota. Maintenance activities will continue to keep pumps operating as designed. The leachate recovery efforts from the OWA and WDA will continue to be closely monitored as required by the permit conditions.



---

**TABLES**

---

LEACHATE ELEVATIONS  
 OLD WASTE AREA  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	4/24/1996	6/6/1996	10/9/1996	1/7/1997	4/4/1997	7/1/1997	10/2/1997	1/5/1998	3/30/1998	6/9/1998
OW-1	30	1,109.23	1,098.61	1,098.26	1,097.05	1,099.53	1,099.81	1,100.34	1,096.22	1,098.45	1,100.92	NR
OW-2	42	1,104.85	1,095.42	1,094.20	1,091.85	1,097.79	1,096.97	1,097.56	1,091.51	1,094.77	1,099.35	1,087.79
OW-3	45	1,108.22	1,094.59	1,097.57	1,088.99	1,093.57	1,093.33	1,094.89	1,088.33	1,092.56	1,096.96	1,091.16
OW-4	60	1,108.63	1,091.95	1,089.68	1,084.93	1,086.33	1,087.93	1,088.63	1,076.10	1,086.84	1,091.54	1,065.20
OW-5	52	1,106.61	1,088.67	1,074.12	1,073.66	1,077.21	1,077.21	1,078.36	1,077.09	1,062.82	1,074.86	1,066.91
OW-6	61	1,110.19	1,100.86	1,076.19	1,085.19	1,088.19	1,075.19	1,083.39	1,080.19	1,074.19	1,073.19	1,074.19
OW-7	27	1,128.22	NR	1,101.47	1,108.94	1,109.02	1,110.54	1,110.37	1,107.69	1,104.62	1,104.62	1,108.97
PZ-4R	25	1,113.42	1,101.37	1,101.32	1,101.92	1,101.11	1,055.42	1,101.31	1,100.23	1,101.27	1,100.93	1,100.29
PZ-5	28	1,120.30	1,103.05	1,107.80	NR	NR	NR	NR	NR	NR	NR	NR
PZ-6	23	1,099.20	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR
PZ-7	23	1,102.94	1,085.88	1,082.75	NR	1,083.74	NR	NR	NR	NR	NR	NR
PZ-8	23	1,101.88	1,091.73	1,090.29	1,088.08	1,092.11	1,092.05	1,093.16	1,086.78	1,090.30	1,095.09	1,089.33
PZ-9	27.4	1,118.12	ND	ND	NR	NR	NR	NR	NR	NR	NR	NR

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	9/17/1998	12/30/1998	3/16/1999	6/9/1999	9/23/1999	12/7/1999	3/8/2000	6/14/2000	9/18/2000	12/20/2000
OW-1	30	1,109.23	1,094.66	1,093.31	1,097.53	1,100.93	1,093.93	1,094.63	1,096.63	1,099.34	1,096.53	1,093.23
OW-2	42	1,104.85	1,077.85	1,085.05	1,095.67	1,099.83	1,089.25	1,085.21	1,097.35	1,098.20	1,092.90	1,068.25
OW-3	45	1,108.22	1,091.72	1,078.52	1,087.07	1,093.02	1,074.42	1,078.49	1,065.22	1,094.25	1,091.37	1,083.22
OW-4	60	1,108.63	1,072.63	1,070.23	1,076.23	1,079.60	1,066.33	1,065.63	1,067.53	1,078.63	NR	1,069.48
OW-5	52	1,106.61	1,069.10	1,064.86	1,066.71	1,058.36	1,057.31	1,064.72	1,071.41	NR	1,079.71	1,061.41
OW-6	61	1,110.19	1,072.79	NR	NR	NR	1,067.99	1,070.99	1,075.19	1,071.19	1,071.19	1,070.19
OW-7	27	1,128.22	1,109.27	1,108.75	1,114.62	1,110.12	1,109.62	1,109.30	1,110.32	1,112.24	1,109.32	1,110.42
PZ-4R	25	1,113.42	1,099.36	1,098.35	ND	1,098.30	1,099.32	1,097.62	1,097.12	1,100.72	ND	ND
PZ-5	28	1,120.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-6	23	1,099.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-7	23	1,102.94	ND	ND	ND	ND	ND	ND	ND	ND	1,084.04	ND
PZ-8	23	1,101.88	1,085.38	ND	1,085.35	1,092.08	ND	ND	ND	ND	1,089.88	ND
PZ-9	27.4	1,118.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:  
 NA - Data not obtained due to obstruction in well.  
 NR - Data not collected or inaccessible.  
 ND - Well measured dry.  
 Depths and elevations are reported in feet.  
 Leachate elevations are corrected to surveyor datum 1/6/99 by Laurel Highlands Surveyors, Inc.  
 Leachate elevations are reported in units of feet above mean sea level (ft. msl.).  
 \*\*\* No measurements were collected during the 3rd Quarter of 2008.

LEACHATE ELEVATIONS  
 OLD WASTE AREA  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	3/20/2001	6/16/2001	9/29/2001	12/13/2001	3/29/2002	6/7/2002	9/30/2002	12/26/2002	3/31/2003	6/26/2003	10/10/2003
OW-1	30	1,109.23	1,091.23	ND	1,092.98	1,081.98	1,083.73	1,082.98	1,082.98	1,094.58	1,085.53	1,100.09	1,093.87
OW-2	42	1,104.85	1,086.65	1,092.05	1,076.60	1,089.97	1,072.30	1,089.97	1,083.03	1,085.11	1,095.93	1,099.03	1,089.03
OW-3	45	1,108.22	1,081.22	1,093.72	1,075.52	1,070.32	1,079.30	1,079.30	1,080.83	1,079.12	1,085.05	1,089.72	1,084.37
OW-4	60	1,108.63	1,066.63	ND	ND	ND	1,069.17	1,069.17	1,069.78	ND	1,075.38	1,077.24	1,072.21
OW-5	52	1,106.61	1,063.31	1,072.40	1,065.61	1,062.31	1,061.21	1,060.98	1,063.38	1,063.81	1,056.34	1,066.83	1,064.50
OW-6	61	1,110.19	NR	NR	NR	NR	ND	ND	NA	NA	NR	NR	NR
OW-7	27	1,128.22	1,111.22	1,112.79	1,111.82	1,108.12	1,113.17	1,104.26	1,104.24	1,111.97	1,112.66	1,104.53	1,109.67
PZ-4R	25	1,113.42	ND	ND	ND	ND	1,100.64	1,098.10	1,098.10	1,101.10	1,096.48	1,099.31	1,097.87
PZ-5	28	1,120.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-6	23	1,099.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-7	23	1,102.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-8	23	1,101.88	ND	1,086.18	ND	ND	ND	ND	ND	ND	1,086.53	1,089.98	ND
PZ-9	27.4	1,118.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	1/14/2004	4/23/2004	7/2/2004	10/13/2004	1/12/2005	4/5/2005	6/30/2005	9/27/2005	1/12/2006	4/12/2006	7/5/2006
OW-1	30	1,109.23	1,102.35	1,103.74	1,101.74	1,089.32	1,101.14	1,102.38	1,083.55	1,093.28	1,083.48	1,095.60	1,096.11
OW-2	42	1,104.85	1,101.67	1,102.43	1,100.95	1,093.97	1,101.66	1,103.35	1,082.00	1,087.34	1,066.15	1,091.60	1,091.37
OW-3	45	1,108.22	1,094.27	1,097.81	1,096.36	1,091.83	1,093.47	1,097.26	1,089.27	1,080.70	1,070.67	1,088.31	1,086.48
OW-4	60	1,108.63	1,047.92	1,084.50	1,082.45	1,079.22	1,080.28	1,084.04	1,077.78	1,071.29	ND	NA	NA
OW-5	52	1,106.61	1,055.89	1,072.31	1,071.14	1,060.28	1,058.18	1,060.63	1,058.81	1,064.55	1,056.06	1,061.93	1,055.86
OW-6	61	1,110.19	NR	NR	NR	NR	NR	NR	NR	NR	NR	NA	NA
OW-7	27	1,128.22	1,113.21	1,115.51	1,111.52	1,111.88	1,105.24	1,118.49	1,110.36	ND	1,113.52	1,114.52	1,112.55
PZ-4R	25	1,113.42	1,101.67	1,100.11	1,099.92	1,101.69	1,099.45	1,100.30	1,099.43	1,097.29	1,096.75	1,096.66	1,096.46
PZ-5	28	1,120.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	WD	WD
PZ-6	23	1,099.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
PZ-7	23	1,102.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	NR	NR
PZ-8	23	1,101.88	1,093.23	1,096.61	1,095.14	1,091.47	1,093.00	1,096.60	1,089.01	ND	ND	1,087.06	Dry
PZ-9	27.4	1,118.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	Dry

Notes:  
 NA - Data not obtained due to obstruction in well.  
 NR - Data not collected or inaccessible.  
 ND - Well measured dry.  
 Depths and elevations are reported in feet.  
 Leachate elevations are corrected to surveyor datum 1/6/99 by Laurel Highlands Surveyors, Inc.  
 Leachate elevations are reported in units of feet above mean sea level (ft. msl.).  
 \*\*\* No measurements were collected during the 3rd Quarter of 2008.

LEACHATE ELEVATIONS  
 OLD WASTE AREA  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	9/29/2006	3/29/2007	6/27/2007	9/26/2007	12/12/2007	3/20/2008	6/30/2008	9/30/2008	1/5/2009	3/10/2009	6/10/2009
OW-1	30	1,109.23	1,082.26	1,103.88	1,097.48	1,082.35	1,094.07	1,099.93	1,099.43	1,095.58	1,091.73	1,095.31	1,094.97
OW-2	42	1,104.85	1,085.47	1,101.95	1,098.10	1,091.82	1,086.75	1,102.75	1,102.35	1,096.26	1,090.17	1,096.36	1,098.22
OW-3	45	1,108.22	1,071.30	1,092.14	1,093.43	1,074.12	1,081.63	1,096.06	1,095.52	1,088.59	1,081.65	1,094.25	1,095.76
OW-4	60	1,108.63	1,069.82	NA	NA	1,073.48	1,070.13	NA	NA	NA	NA	NA	NA
OW-5	52	1,106.61	1,055.79	1,069.43	1,069.43	1,065.78	1,063.18	1,068.56	1,069.20	NA	NA	NA	NA
OW-6	61	1,110.19	NR	NR	NR	NR	NR	NA	NA	NA	NA	NA	NA
OW-7	27	1,128.22	1,109.34	1,110.66	1,109.56	1,109.56	1,112.41	1,120.79	1,111.25	1,112.76	1,114.27	1,113.92	1,112.70
PZ-4R	25	1,113.42	1,096.71	1,099.75	1,099.75	1,099.56	1,097.90	1,100.39	1,099.99	1,099.57	1,099.14	1,098.31	1,097.45
PZ-5	28	1,120.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PZ-6	23	1,099.20	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
PZ-7	23	1,102.94	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
PZ-8	23	1,101.88	ND	ND	ND	ND	ND	1,094.78	1,094.40	NA	ND	NA	NA
PZ-9	27.4	1,118.12	1,107.71	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA

Well No.	Well Depth (feet)	Well Elev. (ft. msl.)	9/17/2009	12/11/2009	3/11/2010	6/23/2010	9/29/2010	12/16/2010
OW-1	30	1,109.23	1,094.67	1,084.72	1,095.32	1,091.62	1,094.05	1,087.51
OW-2	42	1,104.85	1,090.50	1,086.96	1,092.58	1,092.71	1,089.21	1,087.57
OW-3	45	1,108.22	1,088.59	1,084.07	1,088.54	1,092.41	1,079.76	1,080.74
OW-4	60	1,108.63	1,076.13	1,070.08	NA	1,078.98	NA	NA
OW-5	52	1,106.61	NA	NA	NA	NA	NA	NA
OW-6	61	1,110.19	NA	NA	NA	NA	NA	NA
OW-7	27	1,128.22	1,108.58	1,108.47	NR	1,105.46	1,105.51	1,109.19
PZ-4R	25	1,113.42	NA	NA	NA	NA	NA	NA
PZ-5	28	1,120.30	NA	NA	NA	NA	NA	NA
PZ-6	23	1,099.20	NA	NA	NA	NA	NA	NA
PZ-7	23	1,102.94	NA	NA	NA	NA	NA	NA
PZ-8	23	1,101.88	NA	NA	NA	NA	NA	NA
PZ-9	27.4	1,118.12	NA	NA	NA	NA	NA	NA

Notes:  
 NA - Data not obtained due to obstruction in well.  
 NR - Data not collected or inaccessible.  
 ND - Well measured dry.  
 Depths and elevations are reported in feet.  
 Leachate elevations are corrected to surveyor datum 1/6/99 by Laurel Highlands Surveyors, Inc.  
 Leachate elevations are reported in units of feet above mean sea level (ft. msl.).  
 \*Measurements are an average based on 2nd and 4th quarter data.

SUMMARY OF LEACHATE PRODUCTION  
OLD WASTE AREA  
KELLY RUN SANITATION  
FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010				Total Cumulative Recovery
	Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		Total		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total 2010		
OW-1	99,924	164,638	1,197,783	212,408	144,457	937,074	640,708	599,191	873,647	507,326	596,260	406,747	3,279,783	1,300,253	660,092	495,983	13,260	374,471	1,493,805	13,949,809.7													
OW-2	221,669	399,399	1,055,198	166,263	341,080	805,350	382,645	191,063	972,395	574,099	512,327	591,779	1,470,793	713,274	182,350	150,803	298,214	234,462	865,832	16,038,998.3													
OW-3	737,320	1,324,722	501,307	1,148,388	557,185	60,381	371,450	1,397,484	433,447	415,892	767,714	802,594	314,729	233,712	253,661	364,140	123,477	90,433	831,711	10,729,945.9													
OW-4*	1,470	225	883,824	321,078	1,630,035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,836,632.0													
OW-5	181,431	374,012	112,800	320,334	38,488	11,518	134,385	83,724	123,889	205,074	28,313	53,360	385,996	51,540	2,597	6,035	11,978	2,908	23,518	2,133,900.5													
OW-6**	79,110	5,031	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84,167.0														
OW-7	9,101	20,149	4,929	387	0	6,686	26,383	150	263	16	0	69	8	0	0	0	0	0	0	0													
MW-303R	33,268	202,347	416,412	398,592	420,480	420,480	420,480	420,480	420,480	314,496	0	0	0	0	0	0	0	0	0	85,963	20,103	5,539	28,080	111,604	3,572,635.0								
TOTAL	1,363,293	2,400,523	4,172,279	2,567,450	3,131,725	2,241,689	1,976,051	2,692,092	2,824,121	2,016,903	1,906,614	1,836,549	5,451,309	2,451,114	1,098,701	1,102,923	467,032	685,893	3,354,350	34,600,597.3													

Notes:  
OW-4\* - Product plug in well.  
OW-6\*\* - Product plug in well.  
\*\*\* OW-7 could not be located due to extreme snowfall in March, 2010.  
\*\*\*\* The pump in MW-303R was not functioning for the first half of 2010.

**TABLE 3**  
**LEACHATE ELEVATIONS**  
**WESTERN DISPOSAL AREA EXTRACTION WELLS**  
**KELLY RUN SANITATION**  
**FORWARD TOWNSHIP, PENNSYLVANIA**

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	5/26/1992	2/9/1993	1/31/1995	5/22/1996	10/9/1996	1/7/1997	4/4/1997	7/1/1997	10/2/1997
W-1	50.24	1,096.68	1,085.50	1,084.50	1,080.84	1,083.38	1,081.73	1,080.73	1,081.26	1,081.32	1,080.27
W-2	28.87	1,095.74	1,059.79	1,071.68	NA	NA	1,066.75	1,063.22	NA	NA	NA
W-3	66.73	1,092.36	1,065.21	1,067.59	1,060.83	1,061.91	1,035.06	1,049.49	1,050.96	1,050.82	1,050.13
W-4	76.12	1,092.41	1,045.74	1,053.75	1,052.46	1,055.24	1,020.98	1,048.93	1,048.93	1,048.96	1,049.03
W-5	46.39	1,111.48	1,092.98	1,092.53	1,090.13	1,090.83	1,089.55	1,090.23	1,090.43	1,089.13	1,087.83
W-6	55.85	1,119.71	1,097.71	1,097.44	1,092.16	1,104.71	1,092.93	1,095.43	1,091.01	1,091.13	1,090.69
W-7	55.47	1,121.04	1,088.62	1,107.87	1,107.13	1,109.62	1,105.24	1,106.70	1,107.34	1,107.02	1,103.70
W-8	66.75	1,122.56	1,102.56	1,110.13	1,101.86	1,103.25	1,101.96	1,100.41	1,100.14	1,100.24	1,101.24
W-9	29.29	1,128.21	1,092.58	1,103.09	1,092.91	NA	1,098.47	1,097.51	1,097.52	ND	1,097.61
W-10	49.03	1,125.86	1,098.46	1,108.55	1,103.56	1,115.86	1,103.86	1,101.93	1,101.84	1,101.64	1,101.02
W-11	47.15	1,116.07	1,089.97	1,093.60	1,089.33	1,092.54	1,089.49	1,088.32	1,088.18	1,087.96	1,088.17
W-12	55.35	1,104.30	1,058.65	1,082.29	1,059.50	1,061.85	ND	1,057.15	1,056.14	1,056.01	1,055.70
W-13	21.55	1,137.25	1,111.90	1,119.50	1,115.35	NA	ND	ND	1,114.15	ND	ND
W-14	50.99	1,137.70	1,116.85	1,120.44	1,115.77	1,119.37	1,118.79	1,117.45	1,117.09	1,116.73	1,117.42
W-15	45.11	1,139.91	1,121.76	1,108.79	1,127.66	1,127.26	1,128.02	1,126.76	1,126.44	1,126.76	1,126.35
W-16	34.85	1,138.45	1,112.15	1,120.46	1,119.40	1,120.43	1,119.42	1,118.40	1,118.32	1,118.50	1,118.37
W-17	39.44	1,138.38	1,118.28	1,126.55	1,120.83	1,118.38	1,121.24	1,119.50	1,119.18	1,118.84	1,118.65
W-18	52.63	1,140.87	1,112.47	1,119.59	1,117.27	1,118.85	1,117.77	1,116.16	1,115.82	1,125.09	1,115.70
W-19	56.89	1,138.04	1,101.64	1,120.29	1,114.26	1,111.16	1,114.35	1,112.28	1,111.53	1,111.41	1,110.61
W-20	38.88	1,128.05	1,110.68	1,117.10	1,099.51	1,101.17	1,100.27	1,098.89	1,098.46	1,098.01	1,097.65
W-21	33.37	1,134.91	1,112.91	1,120.18	1,119.44	1,126.27	1,119.28	1,117.73	1,117.96	1,118.46	1,117.81
W-22	38.43	1,147.43	1,121.88	1,130.85	1,133.88	1,137.02	1,134.40	1,133.03	1,132.88	1,132.86	1,132.37
W-23	28.44	1,150.35	1,133.65	1,138.14	1,137.60	1,138.39	1,138.44	1,137.11	1,137.13	1,136.84	1,136.79
W-24	17.89	1,150.26	ND	1,132.86	1,131.68	1,101.26	1,132.72	1,131.56	1,131.56	1,131.59	1,131.48
W-25	34.35	1,150.68	1,130.46	1,136.60	1,133.40	1,136.68	1,133.94	1,132.10	1,132.16	1,132.84	1,131.84
W-26	12.09	1,153.56	1,138.16	1,136.81	1,140.32	NA	ND	ND	ND	ND	ND

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	1/5/1998	3/30/1998	6/9/1998	9/17/1998	12/30/1998	3/16/1999	6/9/1999	9/23/1999	3/16/2000
W-1	50.24	1,096.68	1,080.63	1,081.45	NA	1,081.41	1,079.03	NA	1,080.00	1,080.48	1,080.00
W-2	28.87	1,095.74	NA	NA	NA	NA	1,062.40	1,062.74	1,062.64	1,063.44	1,069.70
W-3	66.73	1,092.36	1,049.94	1,050.28	1,060.36	1,047.31	1,036.36	1,048.06	1,049.06	NA	NA
W-4	76.12	1,092.41	1,048.88	1,048.99	1,049.11	1,049.07	1,048.96	1,016.91	1,016.91	1,017.41	1,016.90
W-5	46.39	1,111.48	1,088.78	1,091.29	1,089.00	1,085.83	1,083.43	1,086.03	1,090.45	1,084.98	1,085.50
W-6	55.85	1,119.71	1,089.48	1,089.86	1,089.46	1,089.01	1,087.91	1,087.74	1,087.78	1,086.41	1,087.00
W-7	55.47	1,121.04	1,104.11	1,107.19	1,105.34	1,101.25	1,089.26	1,103.90	1,104.01	1,100.14	ND
W-8	66.75	1,122.56	1,099.53	1,099.84	1,099.38	1,099.33	1,099.04	1,091.66	1,098.68	1,100.96	1,098.20
W-9	29.29	1,128.21	1,097.60	1,097.57	1,097.46	1,097.65	1,097.61	ND	ND	1,097.61	ND
W-10	49.03	1,125.86	1,100.63	1,100.79	1,100.29	NA	1,105.01	1,105.03	1,105.06	1,104.86	1,105.70
W-11	47.15	1,116.07	1,087.02	1,086.80	1,085.57	1,085.82	1,085.67	1,083.57	1,083.77	1,100.17	1,082.60
W-12	55.35	1,104.30	1,055.41	1,056.54	1,055.97	NA	1,053.55	1,053.15	1,049.15	1,046.30	ND
W-13	21.55	1,137.25	1,113.92	ND	ND	1,112.42	1,112.83	1,112.76	1,112.85	1,111.25	ND
W-14	50.99	1,137.70	1,116.67	1,117.03	1,116.50	1,117.38	1,116.17	1,116.72	1,116.16	1,114.20	1,115.80
W-15	45.11	1,139.91	1,125.88	1,126.03	1,125.41	1,125.06	1,124.68	1,124.68	1,124.31	1,121.61	1,123.80
W-16	34.85	1,138.45	1,118.27	1,118.24	1,118.13	1,118.05	1,118.00	1,117.87	1,117.84	1,117.25	1,117.90
W-17	39.44	1,138.38	1,118.35	1,118.62	1,118.48	1,117.62	1,117.38	1,117.68	1,116.75	1,116.58	1,116.30
W-18	52.63	1,140.87	1,115.14	1,114.96	1,114.52	1,114.09	1,113.99	1,113.98	1,113.58	1,123.97	1,113.20
W-19	56.89	1,138.04	1,109.93	1,109.86	1,110.04	1,109.62	1,109.26	1,109.58	1,109.22	1,106.84	1,109.10
W-20	38.88	1,128.05	1,097.51	1,097.46	1,097.08	1,097.12	1,097.22	1,097.47	1,096.57	1,095.95	1,095.30
W-21	33.37	1,134.91	1,117.41	1,117.70	1,116.60	1,114.23	1,113.57	1,113.84	1,113.90	1,113.51	NA
W-22	38.43	1,147.43	1,132.22	1,132.34	1,131.82	NA	1,128.51	1,128.83	1,128.01	1,127.53	1,127.60
W-23	28.44	1,150.35	1,136.77	1,136.71	1,136.61	1,133.13	1,132.95	1,133.12	1,132.98	1,130.65	1,133.00
W-24	17.89	1,150.26	1,131.67	1,131.67	1,131.65	NA	1,126.96	1,127.08	1,127.08	1,125.76	1,127.20
W-25	34.35	1,150.68	1,131.28	1,131.57	1,130.93	1,125.71	1,124.83	1,125.70	1,125.16	1,123.98	1,124.10
W-26	12.09	1,153.56	ND	ND	ND	ND	ND	ND	ND	1,134.96	ND

**Notes:**

ND - Well measured as dry.  
 NA - Data not collected or inaccessible.

TABLE 3

LEACHATE ELEVATIONS  
WESTERN DISPOSAL AREA EXTRACTION WELLS  
KELLY RUN SANITATION  
FORWARD TOWNSHIP, PENNSYLVANIA

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	6/14/2000	9/20/2000	12/20/2000	3/20/2001	6/19/2001	9/29/2001	12/13/2001	3/29/2002	6/7/2002
W-1	50.24	1,096.68	1,080.88	1,080.68	1,079.38	1,079.48	1,079.88	1,075.63	1,075.38	1,075.23	1,075.70
W-2	28.87	1,095.74	1,063.74	1,079.74	1,062.34	ND	ND	1,061.79	1,074.44	1,074.29	1,062.21
W-3	66.73	1,092.36	1,047.75	1,076.36	1,045.76	1,046.45	ND	1,043.66	1,071.06	1,070.91	1,046.41
W-4*	76.12	1092.41 1096.23	1,010.41	1,014.91	1,017.01	NA	ND	NA	ND	ND	NA
W-5	46.39	1,111.48	1,090.28	1,095.48	1,084.18	1,083.38	1,086.08	1,084.53	1,090.18	1,090.03	1,083.88
W-6	55.85	1,119.71	1,086.81	1,103.71	1,086.71	1,086.01	1,085.81	1,085.31	1,098.41	1,098.26	1,084.63
W-7	55.47	1,121.04	1,103.94	1,105.04	1,100.64	1,102.24	1,102.04	1,102.94	1,099.74	1,099.59	1,102.37
W-8	66.75	1,122.56	1,100.76	1,106.56	1,097.96	1,097.24	1,096.56	1,096.61	1,101.26	1,101.11	1,087.80
W-9	29.29	1,128.21	1,093.21	1,112.21	1,097.81	1,097.69	1,097.71	1,097.86	1,106.91	1,106.76	ND
W-10	49.03	1,125.86	ND	ND	ND	ND	ND	ND	ND	ND	NA
W-11	47.15	1,116.07	1,082.37	1,081.47	1,081.37	1,080.07	1,080.87	1,079.77	1,094.77	1,094.62	1,079.81
W-12*	55.35	1104.30 1108.39	NA	1,050.30	1,049.90	1,050.39	1,094.59	NA	1,061.45	ND	1,056.09
W-13	21.55	1,137.25	1,111.85	1,111.75	1,115.65	1,111.75	1,111.85	ND	1,115.95	ND	ND
W-14	50.99	1,137.70	1,115.24	1,112.20	1,114.55	1,110.60	1,114.30	1,109.50	1,116.40	1,116.25	1,102.39
W-15	45.11	1,139.91	1,123.67	1,114.41	1,123.21	1,122.71	1,122.41	1,095.31	1,118.61	1,118.46	1,116.14
W-16	34.85	1,138.45	1,117.83	1,112.95	1,117.85	1,117.85	1,117.85	1,117.55	1,117.15	1,117.00	1,117.41
W-17	39.44	1,138.38	NA	1,112.88	1,115.38	1,114.88	1,114.48	1,113.38	1,117.08	1,116.93	1,112.37
W-18	52.63	1,140.87	1,112.75	1,115.37	1,112.47	1,111.97	1,111.87	1,089.32	1,119.57	1,119.42	1,089.66
W-19	56.89	1,138.04	1,109.24	1,112.54	1,108.14	1,107.64	1,107.34	1,102.19	1,116.74	1,116.59	1,103.22
W-20	38.88	1,128.05	NA	1,102.55	1,095.85	1,095.50	1,095.35	1,095.05	1,106.75	1,106.60	1,095.19
W-21	33.37	1,134.91	1,113.61	1,109.41	1,112.91	1,111.05	1,113.31	1,112.61	1,113.61	1,113.46	1,112.95
W-22	38.43	1,147.43	1,127.23	1,121.93	1,126.71	1,123.03	1,126.13	1,125.43	1,126.13	1,125.98	1,125.28
W-23	28.44	1,150.35	1,132.75	1,124.85	1,132.40	1,119.25	1,132.35	1,132.75	1,129.05	1,128.90	1,131.46
W-24	17.89	1,150.26	1,127.16	1,124.76	1,127.16	1,091.96	1,127.17	1,126.71	1,128.96	1,128.81	1,127.25
W-25	34.35	1,150.68	1,124.78	1,125.18	1,124.63	1,118.38	1,124.18	1,124.68	1,129.38	1,129.23	1,123.22
W-26	12.09	1,153.56	ND	ND	ND	ND	ND	ND	ND	ND	ND

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	9/30/2002	12/26/2002	3/31/2003	6/26/2003	10/10/2003	1/14/2004	4/23/2004	7/2/2004	10/13/2004
W-1	50.24	1,096.68	1,075.46	1,075.38	1,076.30	1,076.55	1,076.14	1,076.64	1,077.05	1,073.65	1,072.70
W-2	28.87	1,095.74	1,074.52	1,074.44	1,075.36	1,075.61	1,075.20	1,075.70	1,076.11	1,072.71	1,071.76
W-3	66.73	1,092.36	1,071.14	1,071.06	1,071.98	1,072.23	1,071.82	1,072.32	1,072.73	1,069.33	1,068.38
W-4*	76.12	1,096.23	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-5	46.39	1,111.48	1,090.26	1,090.18	1,091.10	1,091.35	1,090.94	1,091.44	1,091.85	1,088.45	1,087.50
W-6	55.85	1,119.71	1,098.49	1,098.41	1,099.33	1,099.58	1,099.17	1,099.67	1,100.08	1,096.68	1,095.73
W-7	55.47	1,121.04	1,099.82	1,099.74	1,100.66	1,100.91	1,100.50	1,101.00	1,101.41	1,098.01	1,097.06
W-8	66.75	1,122.56	1,101.34	1,101.26	1,102.18	1,102.43	1,102.02	1,102.52	1,102.93	1,099.53	1,098.58
W-9	29.29	1,128.21	ND	ND	ND	ND	ND	ND	1,108.58	1,105.18	1,104.23
W-10	49.03	1,125.86	NA	NA	NA	NA	NA	NA	1,106.23	1,102.83	1,101.88
W-11	47.15	1,116.07	1,094.85	1,094.77	1,095.69	1,095.94	1,095.53	ND	1,096.44	1,093.04	1,092.09
W-12*	55.35	1,108.39	1,087.17	NA	1,088.01	3.35	3.35	1,088.35	1,088.76	1,085.36	1,084.41
W-13	21.55	1,137.25	ND	ND	ND	ND	ND	ND	ND	ND	1,113.27
W-14	50.99	1,137.70	1,116.48	1,116.40	1,117.32	1,117.57	1,117.16	1,117.66	1,118.07	1,114.67	1,113.72
W-15	45.11	1,139.91	1,118.69	1,118.61	1,119.53	1,119.78	1,119.37	1,119.87	1,120.28	1,116.88	1,115.93
W-16	34.85	1,138.45	1,117.23	1,117.15	1,118.07	1,118.32	1,117.91	1,118.41	1,118.82	1,115.42	1,114.47
W-17	39.44	1,138.38	1,117.16	1,117.08	1,118.00	1,118.25	1,117.84	1,118.34	1,118.75	1,115.35	1,114.40
W-18	52.63	1,140.87	1,119.65	1,119.57	1,120.49	1,120.74	1,120.33	1,120.83	1,121.24	1,117.84	1,116.89
W-19	56.89	1,138.04	1,116.82	1,116.74	1,117.66	1,117.91	1,117.50	1,118.00	1,118.41	1,115.01	1,114.06
W-20	38.88	1,128.05	1,106.83	1,106.75	1,107.67	1,107.92	1,107.51	1,108.01	1,108.42	1,105.02	1,104.07
W-21	33.37	1,134.91	1,113.69	1,113.61	1,114.53	1,114.78	1,114.37	1,114.87	1,115.28	1,111.88	1,110.93
W-22	38.43	1,147.43	1,126.21	1,126.13	1,127.05	1,127.30	1,126.89	1,127.39	1,127.80	1,124.40	1,123.45
W-23	28.44	1,150.35	1,129.13	1,129.05	1,129.97	1,130.22	1,129.81	1,130.31	1,130.72	1,127.32	1,126.37
W-24	17.89	1,150.26	1,129.04	1,128.96	1,129.88	1,130.13	1,129.72	1,130.22	1,130.63	1,127.23	1,126.28
W-25	34.35	1,150.68	1,129.46	1,129.38	1,130.30	1,130.55	1,130.14	1,130.64	1,131.05	1,127.65	1,126.70
W-26	12.09	1,153.56	ND	ND	ND	ND	ND	ND	ND	ND	ND

## Notes:

ND - Well measured as dry.

NA - Data not collected or inaccessible.

\*W-4 elevation changed to 1096.23 during 1st Quarter 2001.

\*W-12 elevation changed to 1108.39 during 1st Quarter 2001.

**TABLE 3**  
**LEACHATE ELEVATIONS**  
**WESTERN DISPOSAL AREA EXTRACTION WELLS**  
**KELLY RUN SANITATION**  
**FORWARD TOWNSHIP, PENNSYLVANIA**

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	1/12/2005	4/5/2005	6/30/2005	9/27/2005	1/12/2006	7/5/2006	9/29/2006	12/21/2006	3/29/2007
W-1	50.24	1,096.68	1,072.43	1,073.33	1,071.47	1,069.75	1,068.90	1,069.53	1,068.13	1,068.69	1,068.58
W-2	28.87	1,095.74	1,062.64	1,061.85	1,061.39	1,060.09	1,059.57	1,060.23	1,059.62	1,059.24	1,059.47
W-3	66.73	1,092.36	1,053.76	1,044.89	1,044.40	1,043.53	1,043.66	1,043.91	1,043.58	1,045.86	1,043.43
W-4*	76.12	1,096.23	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-5	46.39	1,111.48	1,089.12	1,091.55	1,088.68	1,085.05	1,081.91	1,085.50	1,084.38	1,084.58	1,088.90
W-6	55.85	1,119.71	1,083.92	1,082.46	1,079.25	1,082.05	1,080.88	1,079.99	1,080.41	1,079.30	NA
W-7	55.47	1,121.04	1,093.46	1,094.96	1,086.02	1,084.74	1,089.70	1,089.87	1,086.53	1,090.67	1,093.54
W-8	66.75	1,122.56	1,083.71	1,083.55	1,088.21	1,082.48	1,081.63	1,081.66	1,081.66	1,081.68	NA
W-9	29.29	1,128.21	1,094.34	ND	1,094.24	1,094.28	1,094.36	ND	ND	1,094.41	1,088.71
W-10	49.03	1,125.86	ND	ND	ND	ND	ND	ND	ND	NA	NA
W-11	47.15	1,116.07	1,078.55	1,078.22	1,077.99	1,077.84	1,077.72	1,077.60	1,077.50	1,076.85	1,076.62
W-12*	55.35	1,108.39	1,047.92	1,047.92	1,047.92	1,047.92	1,047.92	ND	ND	NA	NA
W-13	21.55	1,137.25	ND	ND	ND	ND	ND	ND	ND	NA	1,110.40
W-14	50.99	1,137.70	1,106.12	1,098.25	1,097.60	1,099.11	1,096.05	DRY	1,100.81	1,103.66	1,106.62
W-15	45.11	1,139.91	1,114.45	1,114.59	1,114.41	1,113.98	1,113.71	1,113.70	ND	1,113.14	1,113.58
W-16	34.85	1,138.45	1,116.29	1,116.39	1,115.34	1,113.77	1,115.55	1,115.03	1,113.62	1,114.80	1,115.13
W-17	39.44	1,138.38	1,110.25	1,110.42	1,109.84	1,109.65	1,109.77	1,109.53	1,109.33	1,109.00	1,109.53
W-18	52.63	1,140.87	1,090.07	1,092.10	1,092.37	1,096.45	1,093.14	DRY	1,095.06	1,092.34	1,094.05
W-19	56.89	1,138.04	1,107.86	1,106.80	1,104.25	1,103.59	1,104.75	1,087.27	1,102.21	1,102.40	1,105.14
W-20	38.88	1,128.05	1,095.07	1,094.86	1,094.76	1,094.87	1,094.72	1,092.84	1,094.55	1,094.47	1,094.37
W-21	33.37	1,134.91	1,112.84	1,112.36	1,112.58	1,112.44	1,112.36	1,112.34	1,112.36	1,112.12	1,111.19
W-22	38.43	1,147.43	1,123.86	1,123.65	1,123.47	1,123.16	1,122.99	1,122.91	1,122.73	1,122.51	1,122.35
W-23	28.44	1,150.35	1,134.24	1,133.31	1,132.79	1,132.24	1,132.45	1,131.40	1,131.42	1,130.95	1,133.02
W-24	17.89	1,150.26	1,127.40	1,127.35	1,126.88	1,126.88	1,127.29	1,127.05	1,127.43	1,127.50	1,127.52
W-25	34.35	1,150.68	1,123.20	1,124.68	1,123.95	1,122.86	1,121.91	1,121.94	1,121.62	1,121.38	1,121.75
W-26	12.09	1,153.56	ND	ND	ND	ND	ND	ND	ND	NA	NA

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	6/27/2007	9/26/2007	12/12/2007	3/20/2008	6/30/2008	9/30/2008	1/5/2009	3/10/2009	6/10/2009
W-1	50.24	1,096.68	1,069.72	1,061.43	1,056.85	1,055.90	1,060.13	1,062.39	1,064.65	1,064.14	1,068.27
W-2	28.87	1,095.74	1,068.78	1,059.23	1,058.63	1,059.36	1,058.59	1,057.82	1,057.04	1,058.25	1,058.51
W-3	66.73	1,092.36	1,065.40	1,043.03	1,058.84	1,043.69	1,043.66	1,052.21	1,060.75	1,060.38	1,043.20
W-4*	76.12	1,096.23	NA	1,048.30	1,048.17	1,061.78	1,066.19	1,064.11	1,062.02	1,053.62	1,046.22
W-5	46.39	1,111.48	1,084.52	1,087.52	1,084.87	1,091.18	1,091.52	1,088.55	1,085.58	1,077.74	1,090.76
W-6	55.85	1,119.71	ND	1,080.76	1,080.16	NA	NA	NA	NA	1,077.50	1,076.42
W-7	55.47	1,121.04	1,094.08	1,088.49	1,085.18	1,092.04	1,090.29	1,088.92	1,087.55	1,083.41	1,082.12
W-8	66.75	1,122.56	1,095.60	1,084.00	1,093.00	1,085.59	1,085.56	1,087.12	1,088.67	1,083.87	1,083.33
W-9	29.29	1,128.21	1,101.25	NA	NA	1,094.33	1,094.46	1,094.42	1,094.38	DRY	DRY
W-10	49.03	1,125.86	1,098.90	NA	NA	NA	NA	NA	NA	1,094.16	1,094.16
W-11	47.15	1,116.07	1,089.11	1,076.51	1,076.42	1,076.77	1,073.97	1,073.77	1,073.57	NA	NA
W-12*	55.35	1,108.39	NA	NA	NA	NA	NA	NA	NA	1,057.67	1,057.88
W-13	21.55	1,137.25	ND	ND	NA	NA	NA	NA	NA	DRY	DRY
W-14	50.99	1,137.70	1,110.74	1,106.05	1,117.40	1,111.10	1,107.64	1,108.47	1,109.30	1,117.74	1,107.31
W-15	45.11	1,139.91	NA	1,113.30	1,113.02	1,113.63	1,113.76	1,113.66	1,113.55	1,113.56	1,113.50
W-16	34.85	1,138.45	1,111.49	1,114.01	1,113.89	1,116.37	1,114.34	1,114.47	1,114.60	1,114.36	1,114.38
W-17	39.44	1,138.38	1,111.42	1,109.08	1,109.60	1,109.67	1,108.97	1,108.80	1,108.62	1,112.27	1,112.46
W-18	52.63	1,140.87	1,113.91	1,096.36	1,093.06	1,095.13	1,092.07	1,092.22	1,092.37	1,090.79	1,094.65
W-19	56.89	1,138.04	1,111.08	1,102.62	1,103.78	1,105.72	1,102.91	1,103.76	1,104.60	1,103.51	1,102.75
W-20	38.88	1,128.05	1,101.09	1,094.34	1,094.55	1,094.60	1,094.46	1,094.50	1,094.53	1,094.34	1,097.19
W-21	33.37	1,134.91	1,107.95	1,112.36	1,112.90	1,112.46	1,112.43	1,112.24	1,112.04	1,112.11	1,112.28
W-22	38.43	1,147.43	1,120.47	1,122.33	1,122.21	1,122.59	1,122.48	1,122.31	1,122.13	1,122.12	1,122.25
W-23	28.44	1,150.35	1,123.39	1,132.11	1,133.05	1,134.09	1,132.69	1,132.74	1,132.79	1,132.40	1,132.26
W-24	17.89	1,150.26	1,123.30	1,127.06	1,127.68	1,127.72	1,127.63	1,127.68	1,127.73	1,127.76	1,127.73
W-25	34.35	1,150.68	1,123.72	1,122.12	1,122.28	1,122.77	1,122.96	1,122.40	1,121.83	1,121.89	1,122.98
W-26	12.09	1,153.56	ND	ND	ND	NA	NA	NA	NA	DRY	DRY

**Notes:**

- ND - Well measured as dry.
- NA - Data not collected or inaccessible.

**TABLE 3**  
**LEACHATE ELEVATIONS**  
**WESTERN DISPOSAL AREA EXTRACTION WELLS**  
**KELLY RUN SANITATION**  
**FORWARD TOWNSHIP, PENNSYLVANIA**

Well I.D.	Well Depth (feet)	Casing Elev. (ft/msl)	9/17/2009	12/11/2009	3/11/2010	6/23/2010	9/29/2010	12/16/2010
W-1	50.24	1,096.68	1,051.57	1,053.67	1,057.61	1,061.89	1,061.51	1,062.93
W-2	28.87	1,095.74	1,057.89	1,057.26	1,058.08	1,058.03	1,057.18	1,057.52
W-3	66.73	1,092.36	1,042.82	1,059.21	1,045.21	1,044.12	1,043.98	1,044.32
W-4*	76.12	1,096.23	1,045.68	1,046.65	1,061.15	1,044.62	1,043.29	1,043.06
W-5	46.39	1,111.48	1,087.16	1,091.07	1,086.70	1,088.68	1,085.87	1,084.57
W-6	55.85	1,119.71	1,083.09	1,079.50	1,079.24	1,074.99	1,079.15	1,079.30
W-7	55.47	1,121.04	1,087.83	1,083.88	1,090.56	1,088.84	1,085.33	1,083.85
W-8	66.75	1,122.56	1,088.69	1,082.23	1,082.38	1,091.40	1,081.64	1,084.16
W-9	29.29	1,128.21	DRY	DRY	DRY	DRY	DRY	1,094.58
W-10	49.03	1,125.86	1,093.87	1,093.75	1,093.77	1,093.60	1,092.94	1,093.55
W-11	47.15	1,116.07	1,074.94	1,075.15	1,088.37	1,079.67	1,074.77	1,072.40
W-12*	55.35	1,108.39	1,057.75	1,057.74	1,061.23	1,059.48	1,058.33	1,057.18
W-13	21.55	1,137.25	DRY	DRY	DRY	DRY	DRY	DRY
W-14	50.99	1,137.70	1,105.99	1,106.47	1,111.80	1,107.58	1,106.08	1,108.11
W-15	45.11	1,139.91	1,113.22	1,109.51	1,106.10	1,106.14	1,106.16	1,106.30
W-16	34.85	1,138.45	1,113.44	1,113.60	1,114.49	1,112.93	1,112.07	1,111.93
W-17	39.44	1,138.38	1,112.54	1,111.45	1,113.27	1,111.17	1,110.21	1,110.42
W-18	52.63	1,140.87	1,094.26	1,090.73	1,090.66	1,090.73	1,093.71	1,093.16
W-19	56.89	1,138.04	1,101.39	1,105.00	1,104.59	1,100.64	1,101.02	1,103.25
W-20	38.88	1,128.05	1,095.26	1,098.20	1,107.78	1,098.26	1,096.62	1,095.82
W-21	33.37	1,134.91	1,112.78	1,112.20	1,111.99	1,112.21	1,112.46	1,112.06
W-22	38.43	1,147.43	1,121.76	1,121.55	1,121.99	1,121.51	1,121.48	1,121.47
W-23	28.44	1,150.35	1,131.56	1,131.29	1,133.65	1,133.73	1,133.46	1,133.68
W-24	17.89	1,150.26	1,127.75	1,127.73	1,127.83	1,127.80	1,127.74	1,127.77
W-25	34.35	1,150.68	1,122.43	1,121.87	1,122.31	1,121.75	1,121.48	1,121.34
W-26	12.09	1,153.56	DRY	DRY	DRY	DRY	DRY	DRY

Notes:

ND - Well measured as dry.

NA - Data not collected, inaccessible, or blocked.

\*W-4 elevation changed to 1096.23 during 1st Quarter 2001.

\*W-12 elevation changed to 1108.39 during 1st Quarter 2001.

\*Measurements are an average based on 2nd and 4th quarter data.

**SUMMARY OF LEACHATE PRODUCTION  
WESTERN DISPOSAL AREA  
KELLY RUN SANITATION  
FORWARD TOWNSHIP, PENNSYLVANIA**

Well No.	Reported Previous Production	1999 Total	2000 Total	2001 Total	2002 Total	2003 Total	2004 Total	2005 Total	2006 Total	2007 Total	2008 Total	2009 Total	2010				Total Cumulative Recovery	
													1st Quarter	2nd Quarter	3rd Quarter	4th Quarter		Total 2010
W-1	7,364	NR	NR	NR	NR	NR	117,917											
W-2***	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0
W-3	85,214	5	5,432	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90,652
W-4**	179,945	82,857	248,929	44,513	454	0	0	0	0	0	0	0	0	0	0	0	0	556,698
W-8****				8,611	12,131	11,585	11,996	3,700	5,304	807	0	0	0	0	0	0	0	54,134
W-12	2,419	872	9,354	27,352	9,063	3,819	10,011	13,707	0	0	0	0	0	0	0	0	0	76,597
W-14*				8,083	31,962	7,673	59,096	55,892	22,949	0	0	0	0	0	0	0	0	185,655
W-15*				28,662	1,546	52,486	0	0	0	0	0	16,884	4,564	11,576	7,237	5,379	28,756	157,090
W-18				34,982	45,391	47,526	44,296	34,395	24,665	28,690	32,632	22,620	4,586	8,419	5,066	6,747	24,819	364,835
W-19	3,609	NR	19	1	6	392	0	0	0	392	3,629							
W-20	299	NR	0	0	0	0	0	0	0	0	299							
TOTAL	278,850	83,734	258,284	157,635	100,547	123,089	125,399	107,694	52,918	64,522	108,180	154,810	39,067	23,841	23,594	69,911	156,413	1,678,570

Notes:

- All units reported in gallons.
- Previous production in wells W-1, W-3, W-19, and W-20 included volume extracted during aquifer testing during 5/24 through 6/7/96.
- Leachate was pumped from W-3, W-4, and W-12 on an interim basis from 8/96 to 11/96.
- Extraction pump could not be installed in W-2 due to obstruction deep in the well (12/16/96).
- Pumps installed and leachate extraction commenced in wells W-8, W-15, and W-18 on 7/31/01.
- NR - No reading.
- \* Pump switched from W-15 to W-14 on November 15, 2001. Pump switched from W-14 to W-15 on November 8, 2002. Pump switched from W-15 to W-14 on November 7, 2003.
- W-4\*\* - No evidence of pump in well.
- W-2\*\*\* - No evidence of pump in well.
- W-15\* - Well contains product which limits the amount of time pump can remain in well without damage.
- W-8\*\*\*\* - Leachate pump removed for servicing, unable to reinstall, subsequently moved to W-1.

TABLE 5

SELECTED CONSTITUENTS FROM THE BENWOOD LIMESTONE W&Z MONITORING WELLS  
 2001-2010 QUARTERLY SAMPLING EVENTS  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	BENZENE																																						
	2001			2002			2003			2004			2005			2006			2007			2008			2009			2010											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4							
MW-302	72.3	67	61	57	56	63	73	62	40	51	72	80	61	63	52	62.9	61	34.7	81.8	56	70.5	70.4	47.9	24.9	38.7	68.1	51.0	57.1	52.8	54.3	34.9	66.0	27.1	41.4	44.4	10.9	49.5	35.1	
MW-301R																																							
MW-303	33	83	36	254*	135	124		63					56	86.2	173	16	6.4	7.0	7.3	47.2	10.4	47.3	57.7					53.3	35.5	53.3	33.0	66.7	71.5	11.0	112.0	52.0	10.0		
MW-304																																							
MW-306	20.1	J	26	14	19	15	16	9	13	6	15	14	8	13.6	5.3	9.8	26.3	26.8	28.2	24.0	28.7	20.9																	
MW-307									8	11	8	13	14.3	7	9.2	9.5																							
MW-310R																																							
MW-311																																							
MW-312R	37.4	33	30	24	29	26	27	25	33	23	21	17	15	13	10	10.6	12	9.8	10.9																				

Well No.	ETHYLBENZENE																																										
	2001			2002			2003			2004			2005			2006			2007			2008			2009			2010															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4											
MW-302	10	12	11	10	10	10	9	9	7	6	5	6	7.7															6.8	6.2	6.0	5.6	6.2				5.9							
MW-301R																																											
MW-303	13.5	22	6	55*	27	36		36	22			22	22	12.2	28.2					6	25.4							8.0												11.1			
MW-304																																											
MW-306																																											
MW-307																																											
MW-310R																																											
MW-311																																											
MW-312R																																											

Notes:  
 Concentrations given in ug/l.  
 MW-303 abandoned October, 1997; MW-303R installed September 15, 1997.  
 Naphthalene was not sampled every quarter.  
 Empty cells indicate dry or non-detect of parameter.  
 MW-310 is not included since this well is either dry or does not recover during sampling activities.  
 J indicates an estimated value for a parameter detected in groundwater.  
 \*MW-303R resampled on May 6, 2002 due to possible anomalous data.  
 \*\*Insufficient volume to collect a VOC sample.

SELECTED CONSTITUENTS FROM THE BENWOOD LIMESTONE WBZ MONITORING WELLS  
 2001-2010 QUARTERLY SAMPLING EVENTS  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Well No.	XYLENE																																							
	2001			2002			2003			2004			2005			2006			2007			2008			2009			2010												
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
MW-302																																								
MW-301R																																								
MW-303																																								
MW-303R																																								
MW-304																																								
MW-306																																								
MW-307																																								
MW-310R																																								
MW-311																																								
MW-312R																																								

Well No.	NAPHTHALENE																																											
	2001			2002			2003			2004			2005			2006			2007			2008			2009			2010																
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
MW-302																																												
MW-301R																																												
MW-303																																												
MW-303R																																												
MW-304																																												
MW-306																																												
MW-307																																												
MW-310R																																												
MW-311																																												
MW-312R																																												

Notes:  
 Concentrations given in ug/l.  
 MW-303 abandoned October 1997; MW-303R installed September 15, 1997.  
 Naphthalene was not sampled every quarter.  
 Empty cells indicate dry or non-detect of parameter.  
 MW-310 is not included since this well is either dry or does not recover during sampling activities.  
 J indicates an estimated value for a parameter detected in groundwater.  
 \*MW-303R resampled on May 6, 2002 due to possible anomalous data.  
 \*\*insufficient volume to collect a VOC sample.

TABLE IV-1 QUARTERLY, SEMI-ANNUAL, AND ANNUAL GROUNDWATER MONITORING PARAMETERS  
 KELLY RUN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

Benwood Wells	Quarterly Groundwater Monitoring Parameters										Semi-Annual Groundwater Monitoring Parameters						Annual Groundwater Monitoring Parameters									
	pH	TOC	TOH	Specific Conductance	Chloride	Chromium (total and dissolved)	Naphthalene	Benzene	Toluene	Rhlybenzene	Xylene	Cresolite (Phenolics)	Sodium	Sulfate	Benzene	Toluene	Rhlybenzene	Xylene	Naphthalene	Iron (total and dissolved)	Lead (total and dissolved)	Arsenic (total and dissolved)	Aluminum (total and dissolved)	Manganese (total and dissolved)	Cyanide	Phenol
Concentration Limits	6.5-8.5	NA	NA	NA	250 PPM	100 PPB	100 PPB	5 PPB	1000 PPB	700 PPB	10000 PPB	NA	NA	500	5 PPB	1000 PPB	700 PPB	10000 PPB	100 PPB	300 PPB	5 PPB	50 PPB	200 PPB	50 PPB	200 PPB	4 PPM
MW-301R	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-302R	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-303R	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-304	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-305	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-307	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-310R	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-311D	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MW-312R	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PZ-1	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PZ-2	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●
PZ-3	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Notes and Highlights:

1. If the above highlighted downgradient Benwood monitoring wells exhibit statistically significant increases above the established concentration limits, KRS would be required to sample surface water points SP-1 through SP-11 and KR-1 in addition to seeps SS1 through SS3.
2. Permit Part G - Monitoring Program Evaluation - Determine the rate, extent of migration and concentration of hazardous waste, waste constituents, or decomposition byproducts in groundwater.
3. Permit Part G - Monitoring Program Evaluation - Determine groundwater flow rate and direction for each flow zone at least annually.
4. Permit Part G - Monitoring Program Evaluation - Determine if there is a statistically significant increase for each parameter above. Statistical procedures in IV, F will be used.
5. Permit Part G - Monitoring Program Evaluation - Statistical evaluation is to be performed within 30 days after completion of sampling (IV.G.5).
6. Permit Part H - Reporting, Recordkeeping and Response - Report in writing semi-annually on groundwater monitoring and on the effectiveness of the CAP.
7. Permit Part H - If there is a statistically significant increase above the concentration limits for the above parameters, an amended CAP must be submitted.
8. Permit Part H - If there is a statistically significant increase above the concentration limits for MW-311D, contaminated water must be remediated at this location.
9. MW-306 was abandoned prior to the First Quarter 2007 in accordance with the August 14, 2006 KRS permit conditions.

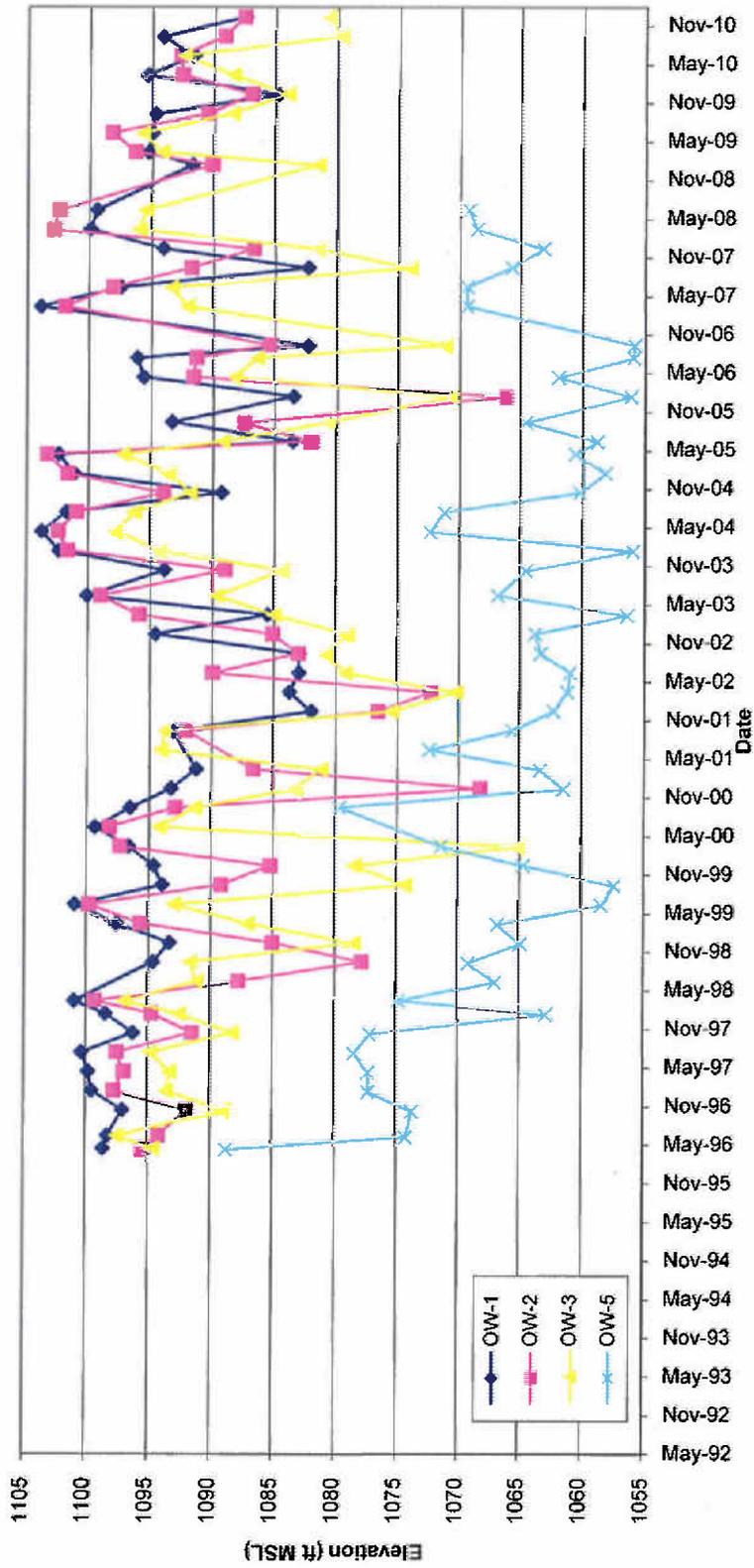
▲	Quarterly Monitoring Requirement
●	Semi-Annual Monitoring Requirement
■	Annual Monitoring Requirement

---

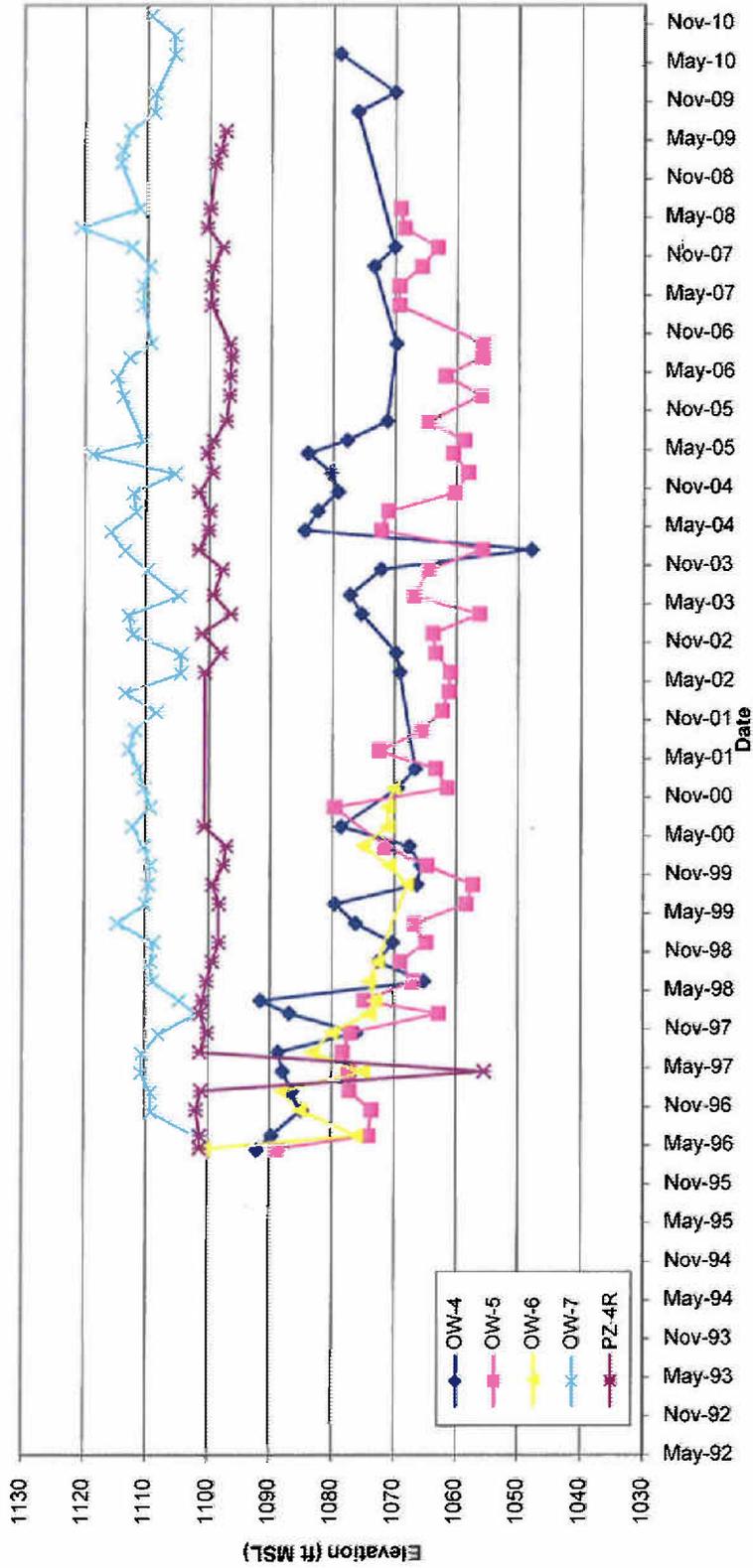
**FIGURES**

---

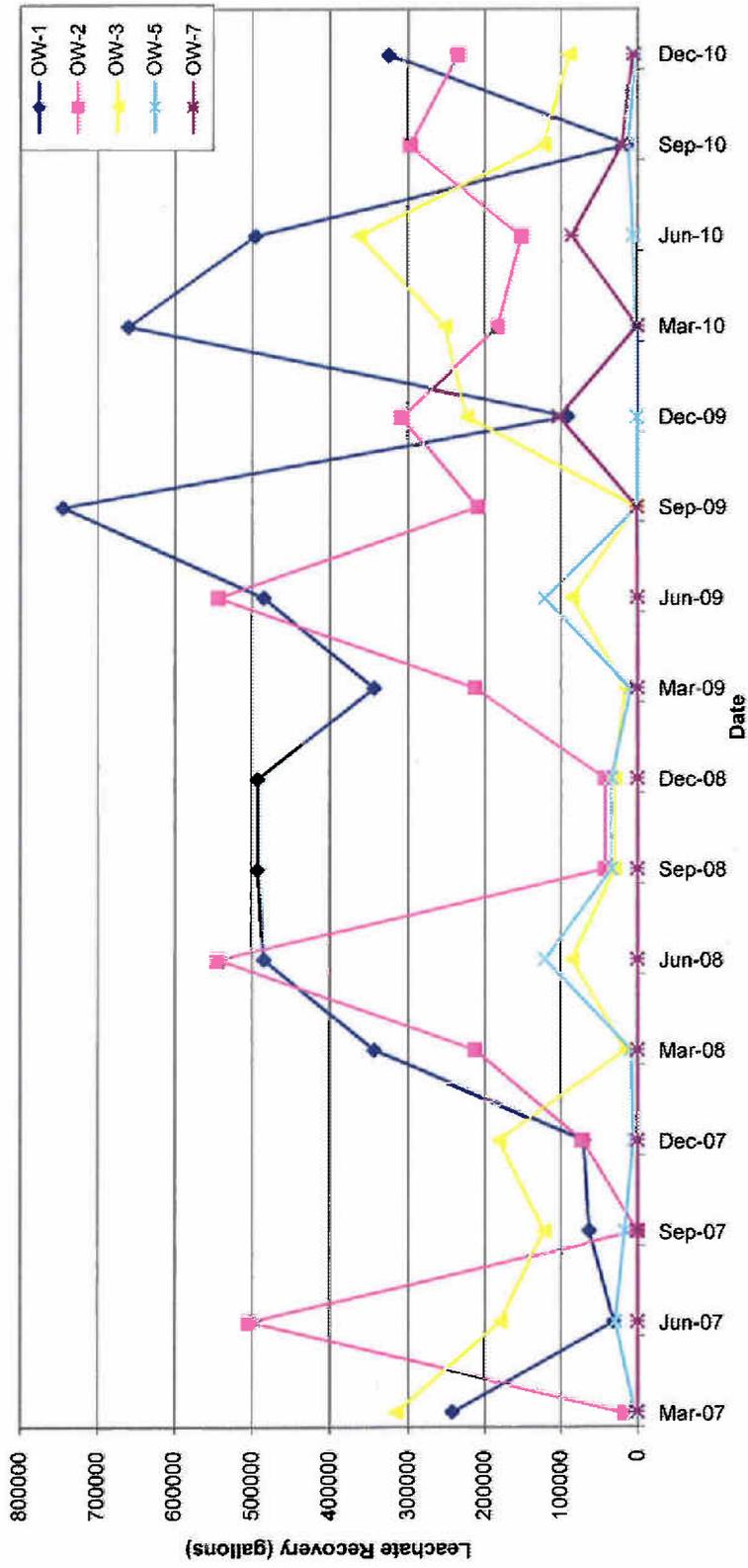
**Figure 1A**  
**Old Waste Area - Leachate Elevation Trend**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



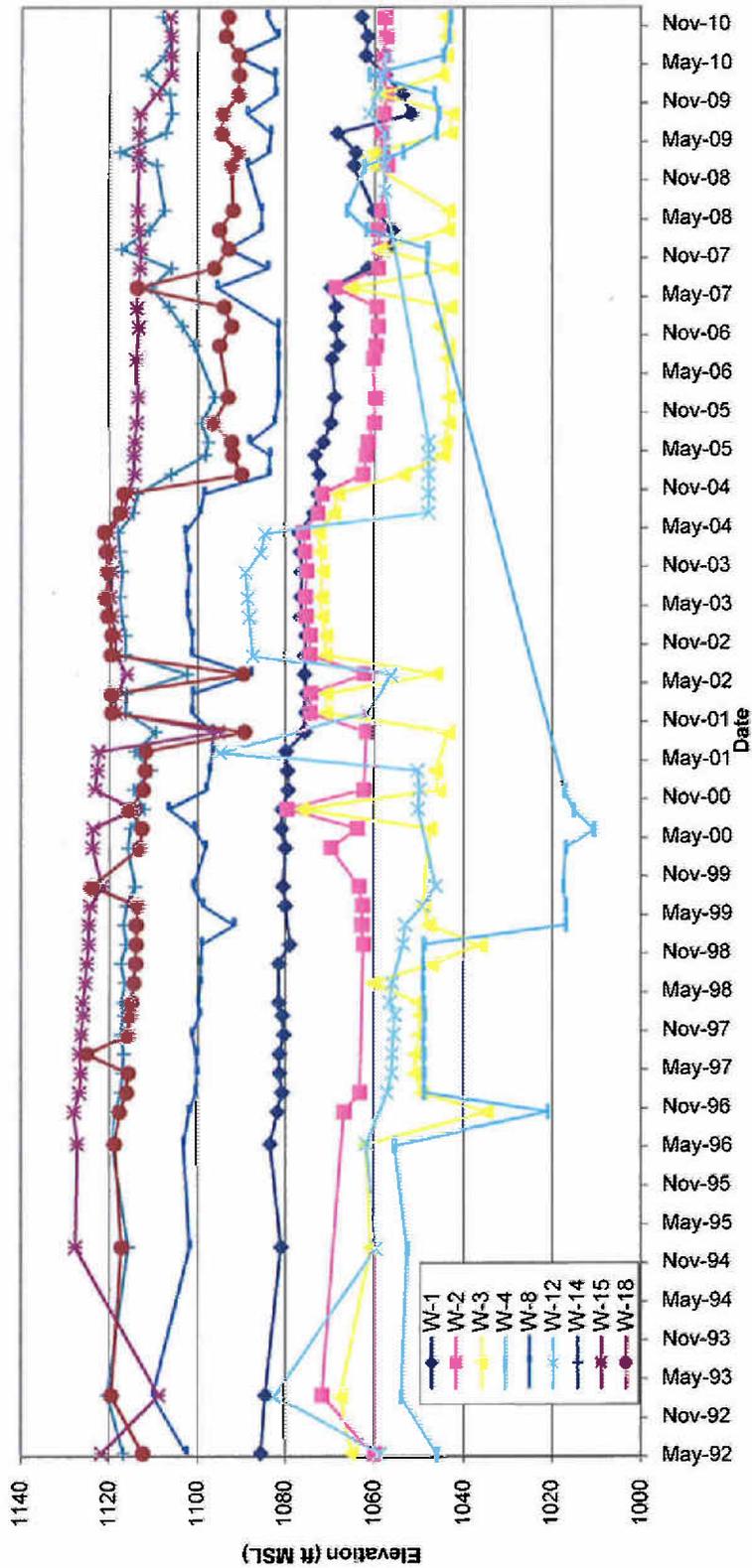
**Figure 1B**  
**Old Waste Area - Leachate Elevation Trend**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



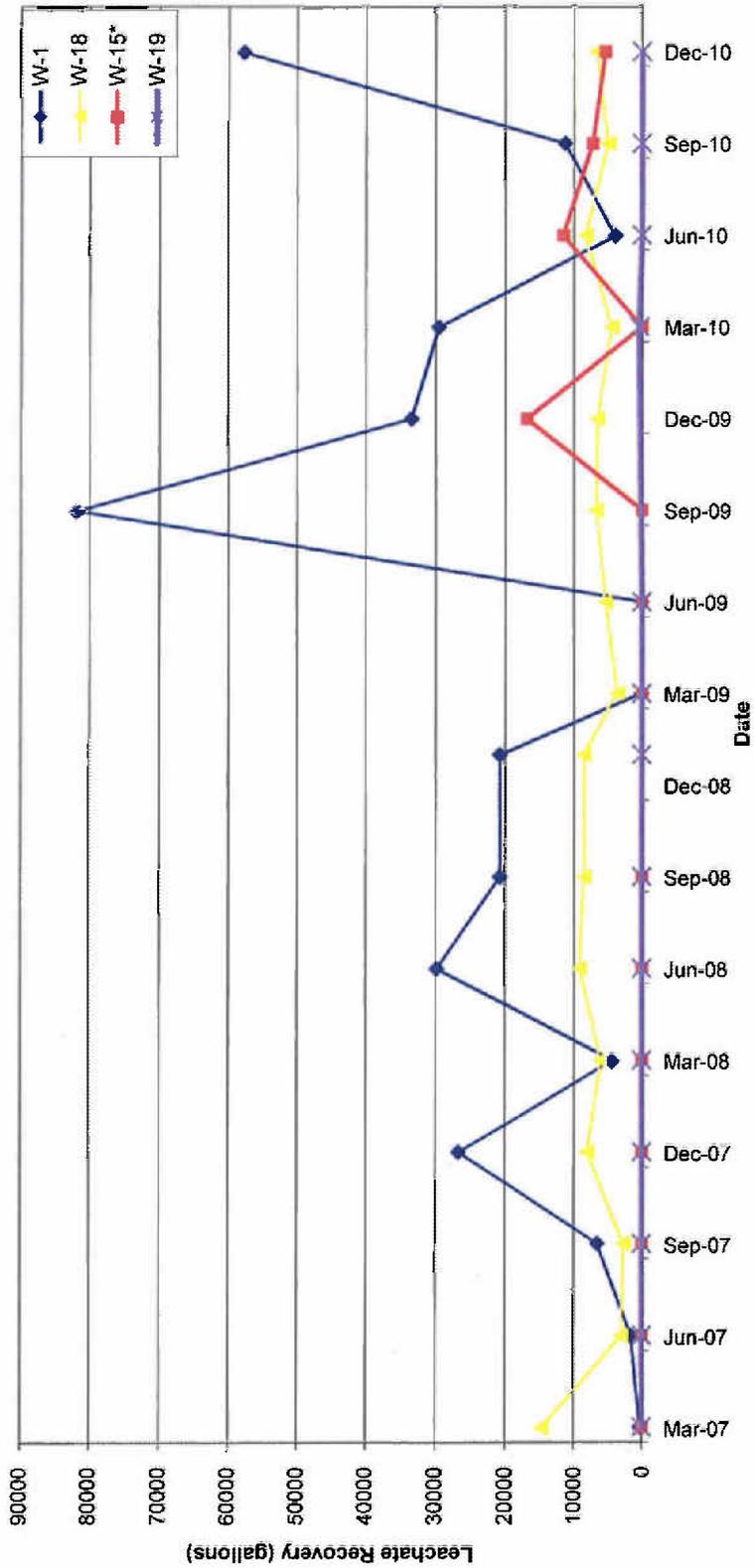
**Figure 2**  
**Old Waste Area - Leachate Recovery Trend**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



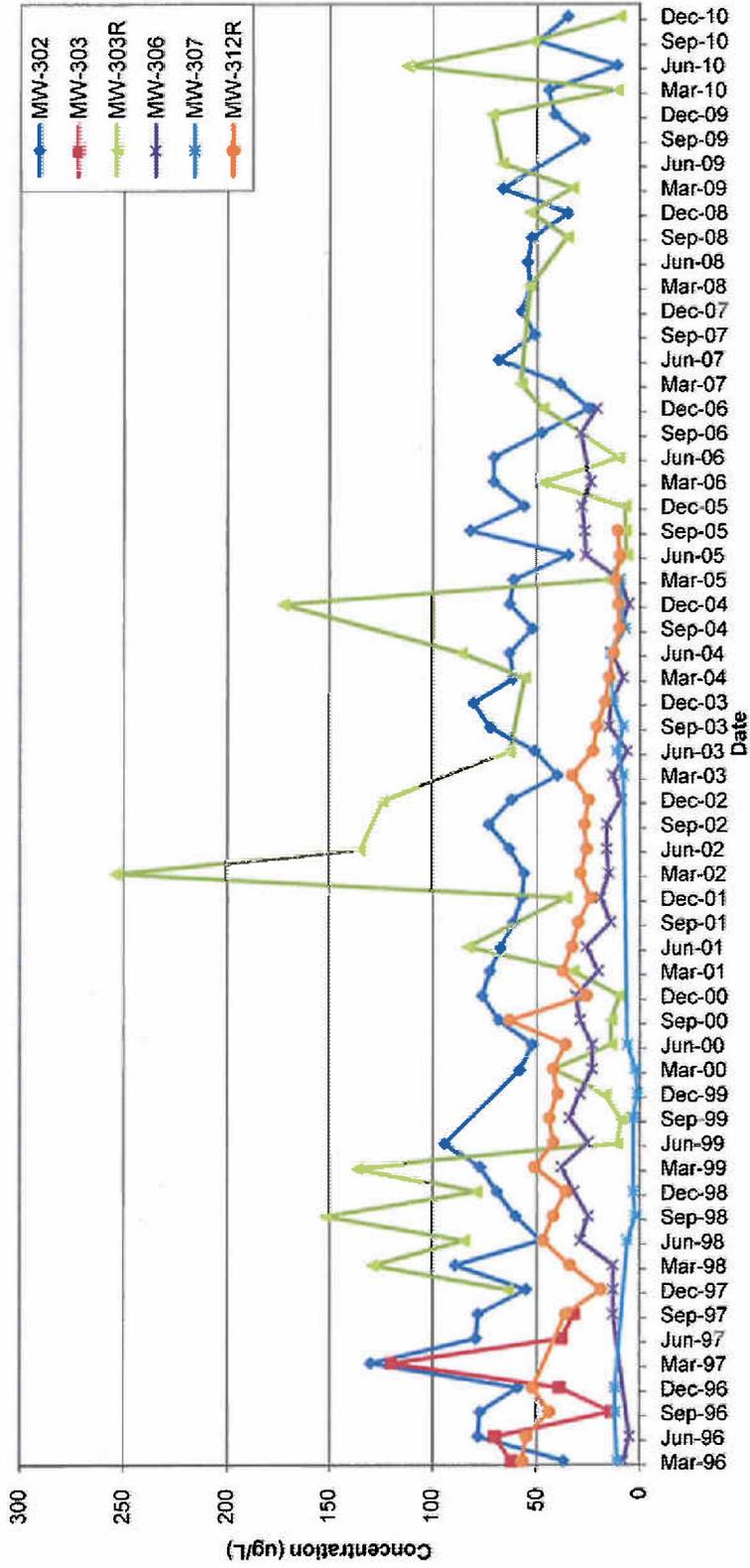
**Figure 3**  
**Western Disposal Area - Leachate Elevation Trend Data**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Semi-Annual Report 2010**



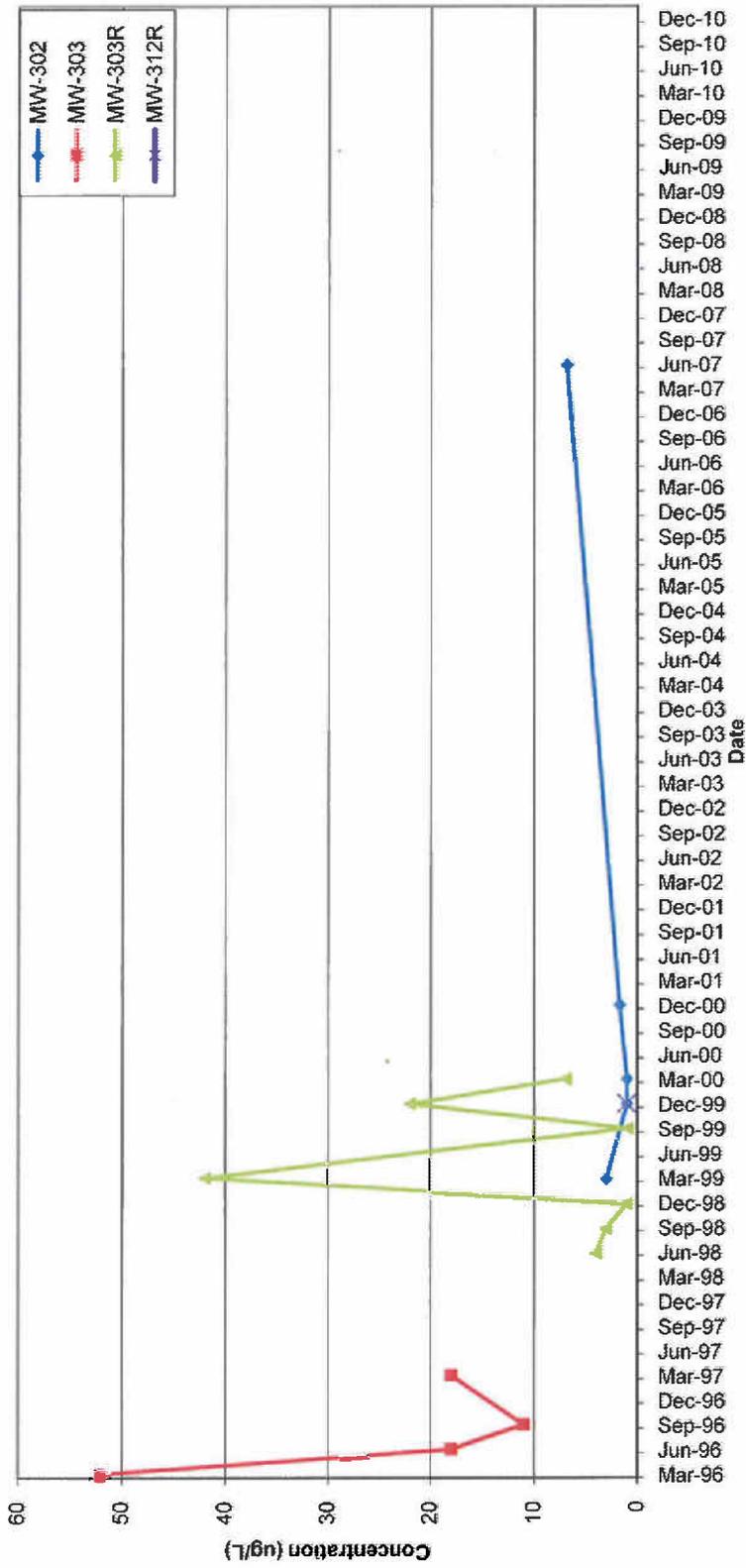
**Figure 4**  
**Western Disposal Area - Leachate Recovery Trend**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



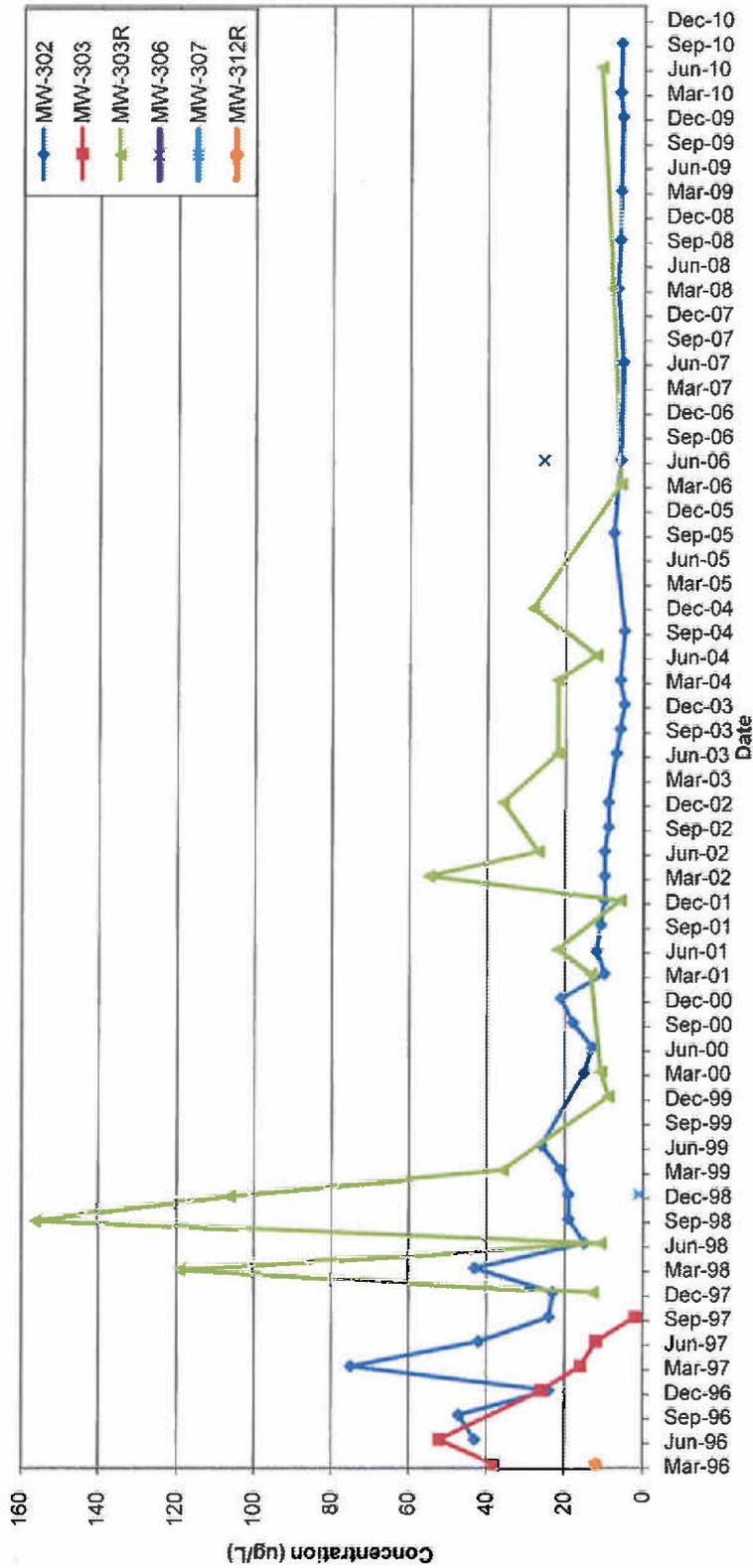
**Figure 5A**  
**Benwood Limestone Monitoring Wells - Benzene Concentration Profile**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



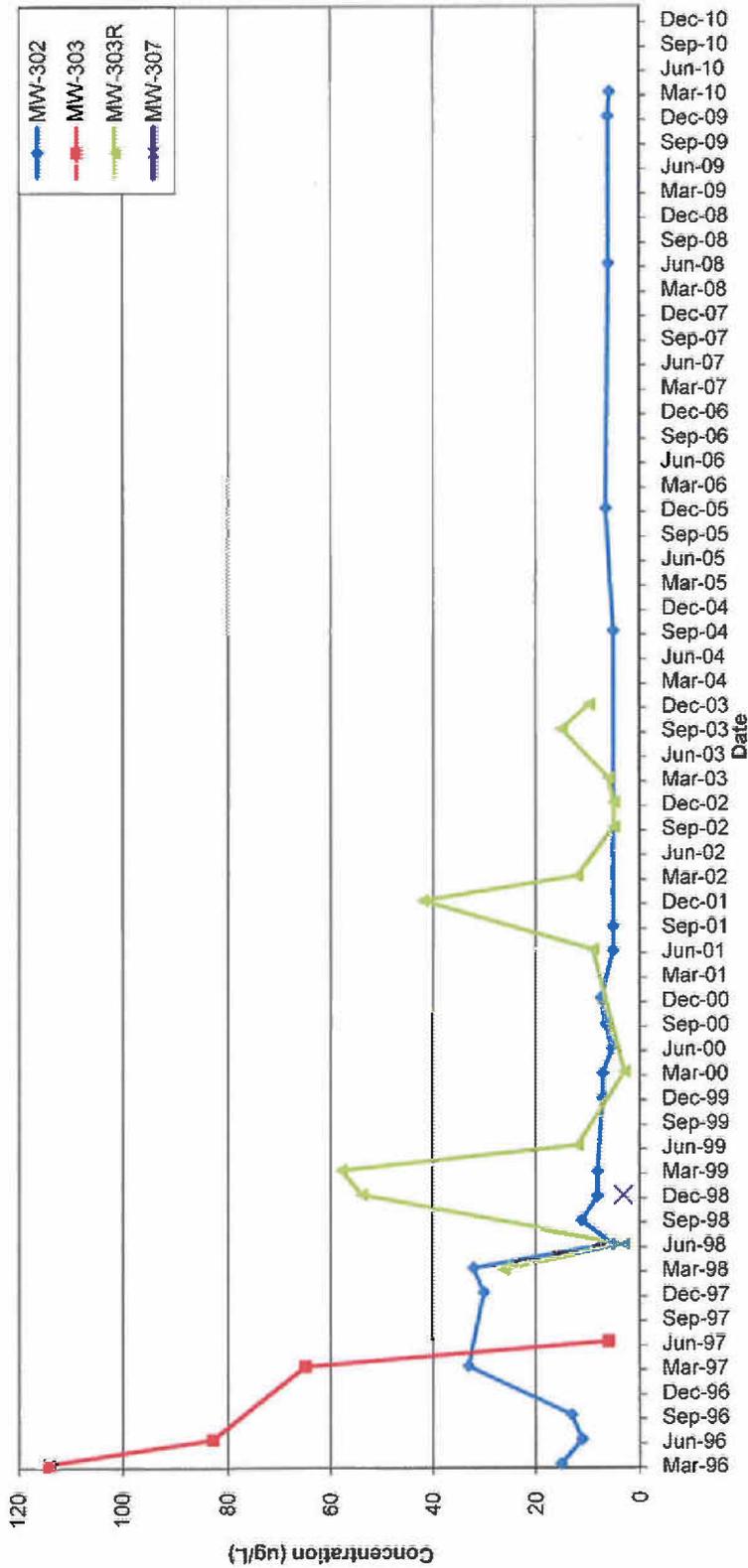
**Figure 5B**  
**Benwood Limestone Monitoring Wells - Xylene Concentration Profile**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



**Figure 5C**  
**Benwood Limestone Monitoring Wells - Ethylbenzene Concentration Profile**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**

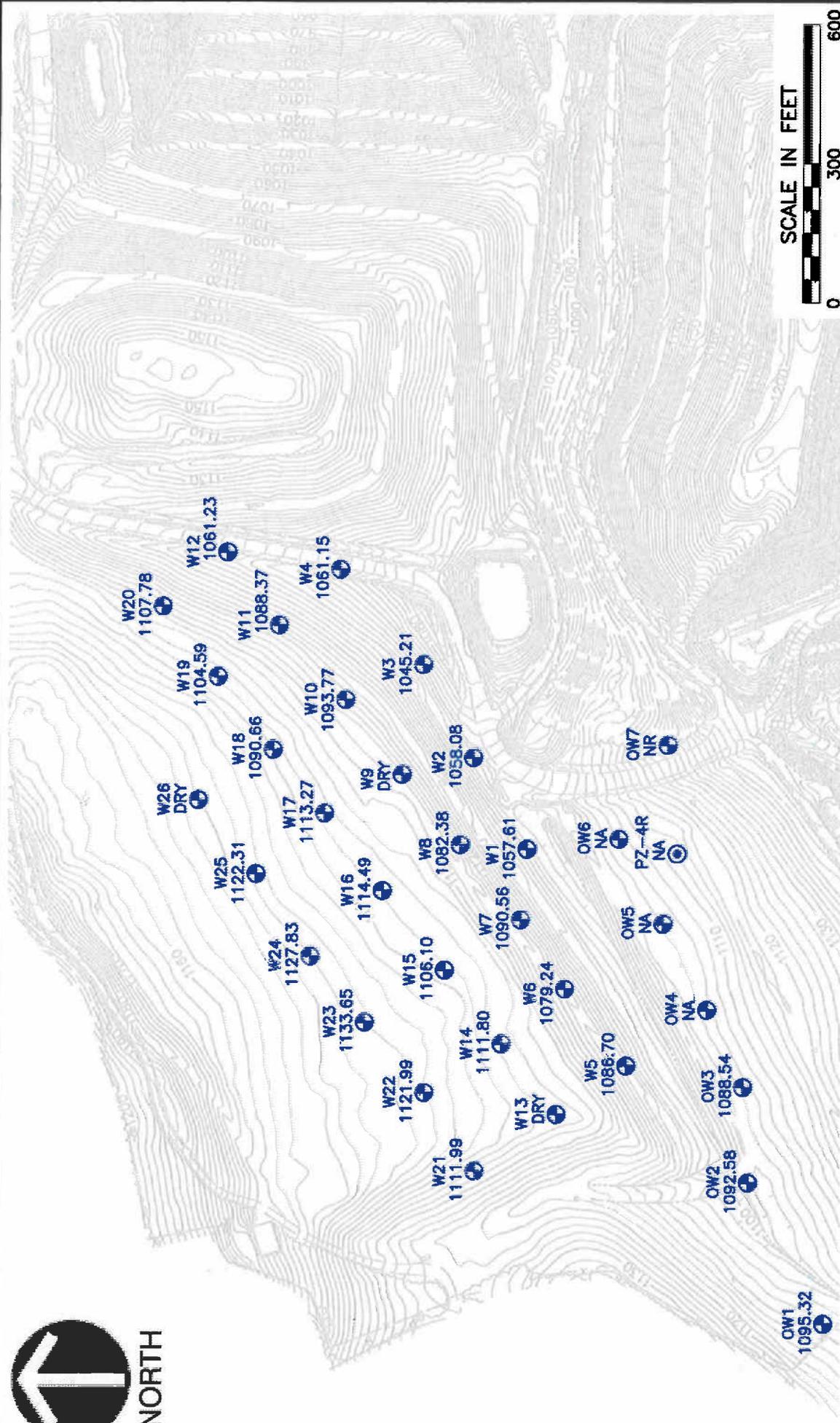


**Figure 5D**  
**Benwood Limestone Monitoring Wells - Naphthalene Concentration Profile**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**





NORTH



**Civil & Environmental Consultants, Inc.**

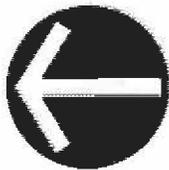
4000 Triangle Lane Suite 200 - Export, PA 15632-9522  
724-327-5200 · 800-899-3610  
www.cecinc.com

KELLY RUN SANITATION, INC. LANDFILL  
OW & WDA LEACHATE MANAGEMENT  
FORWARD TOWNSHIP, ALLEGHENY COUNTY,  
PENNSYLVANIA  
LIQUID ELEVATION  
MARCH 11, 2010

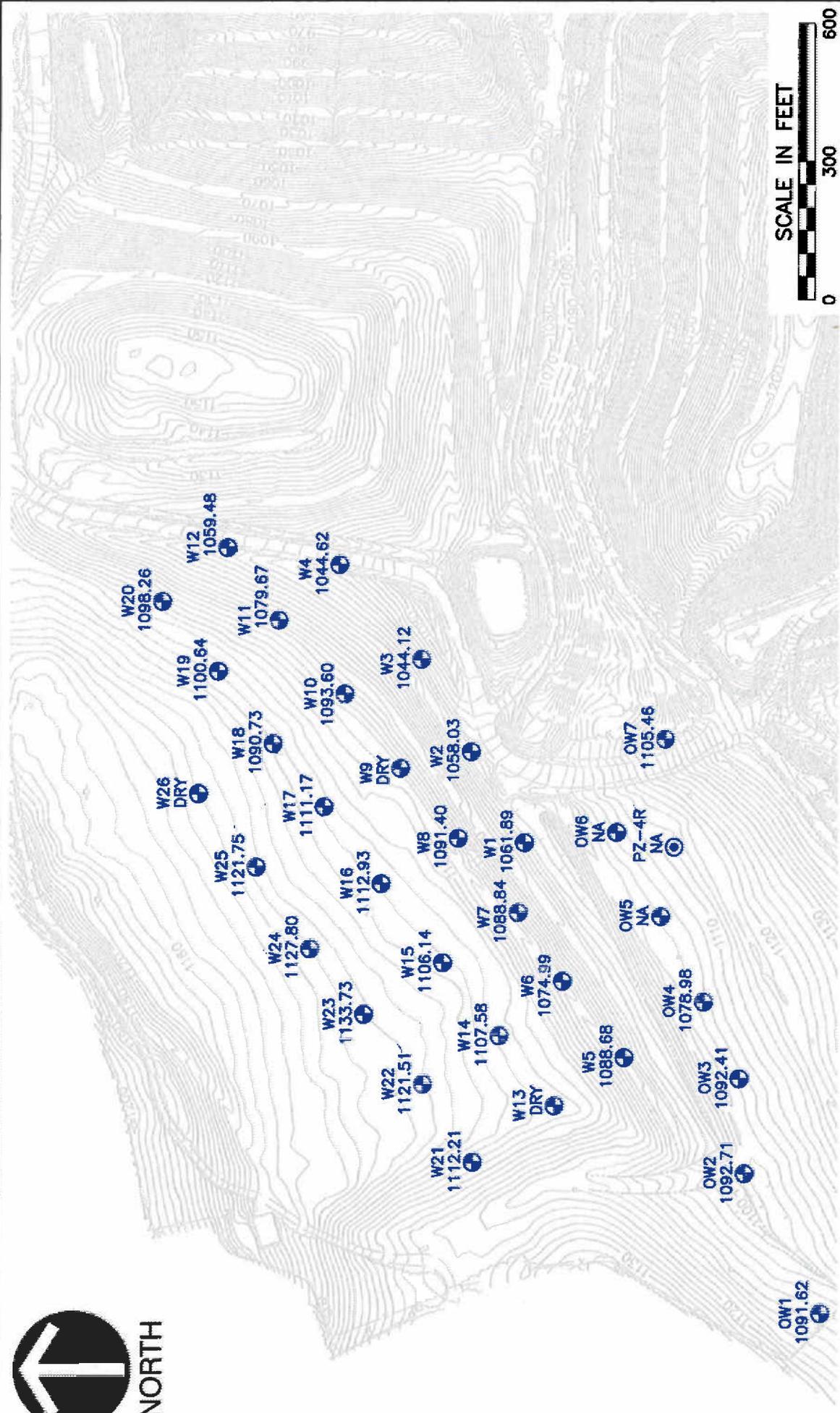
DRAWN BY:	JHG	CHECKED BY:	<i>[Signature]</i>	APPROVED BY:	
DATE:	JULY 21, 2010	DWG SCALE:	1"=300'	PROJECT NO.:	101-062.AW00
				FIGURE NO.:	6A

**NOTE:**

1. NA - DATA NOT AVAILABLE DUE TO OBSTRUCTION IN WELL.



**NORTH**



SCALE IN FEET  
0 300 600

**NOTE:**

1. NA - DATA NOT AVAILABLE DUE TO OBSTRUCTION IN WELL.



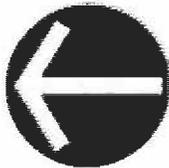
**Civil & Environmental Consultants, Inc.**

4000 Triangle Lane, Suite 200 - Export, PA 15632-9522  
724-927-5200 · 800-899-3610  
www.cecinc.com

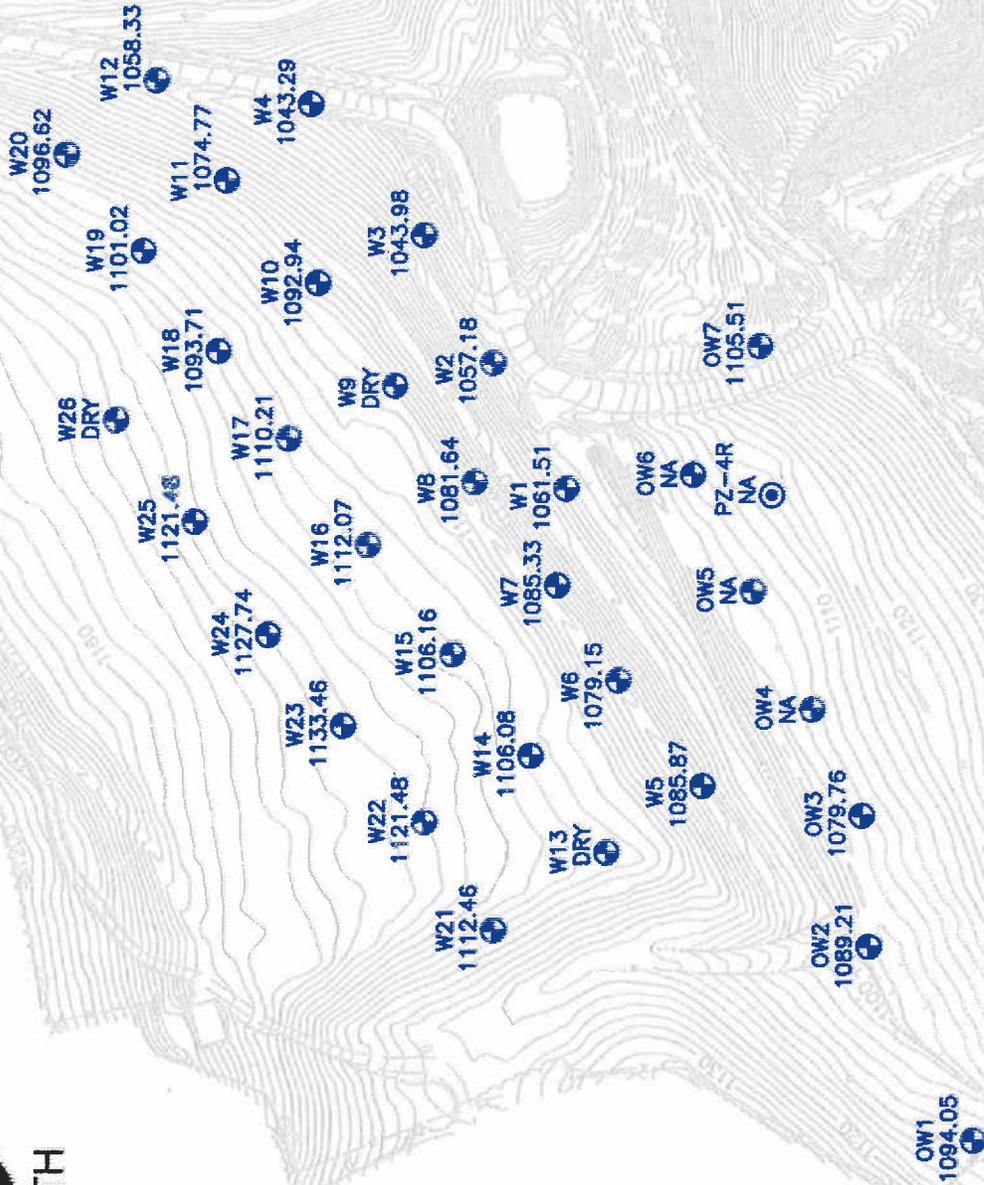
**KELLY RUN SANITATION, INC. LANDFILL  
OW & WDA LEACHATE MANAGEMENT  
FORWARD TOWNSHIP, ALLEGHENY COUNTY,  
PENNSYLVANIA**

**LIQUID ELEVATION  
JUNE 23, 2010**

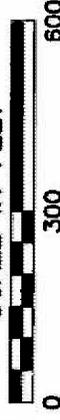
APPROVED BY:	PROJECT NO: 101-062-AW00	FIGURE NO.:	<b>6B</b>
DRAWN BY: JHG	CHECKED BY:	DATE: JULY 21, 2010	DWG SCALE: 1"=300'



NORTH



SCALE IN FEET



KELLY RUN SANITATION, INC. LANDFILL  
 OW & WDA LEACHATE MANAGEMENT  
 FORWARD TOWNSHIP, ALLEGHENY COUNTY,  
 PENNSYLVANIA

LIQUID ELEVATION  
 SEPTEMBER 29, 2010

FIGURE NO.:

PROJECT NO: 101-062.AW00

6C



**Civil & Environmental Consultants, Inc.**

4000 Triangle Lane, Suite 200 - Export, PA 15632-9522  
 724-327-5200 · 800-899-3610  
 www.cecinc.com

DRAWN BY:

JHG

CHECKED BY:

*[Signature]*

1"=300'

APPROVED BY:

PROJECT NO: 101-062.AW00

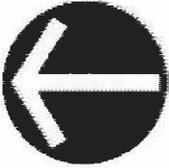
FIGURE NO.:

PROJECT NO: 101-062.AW00

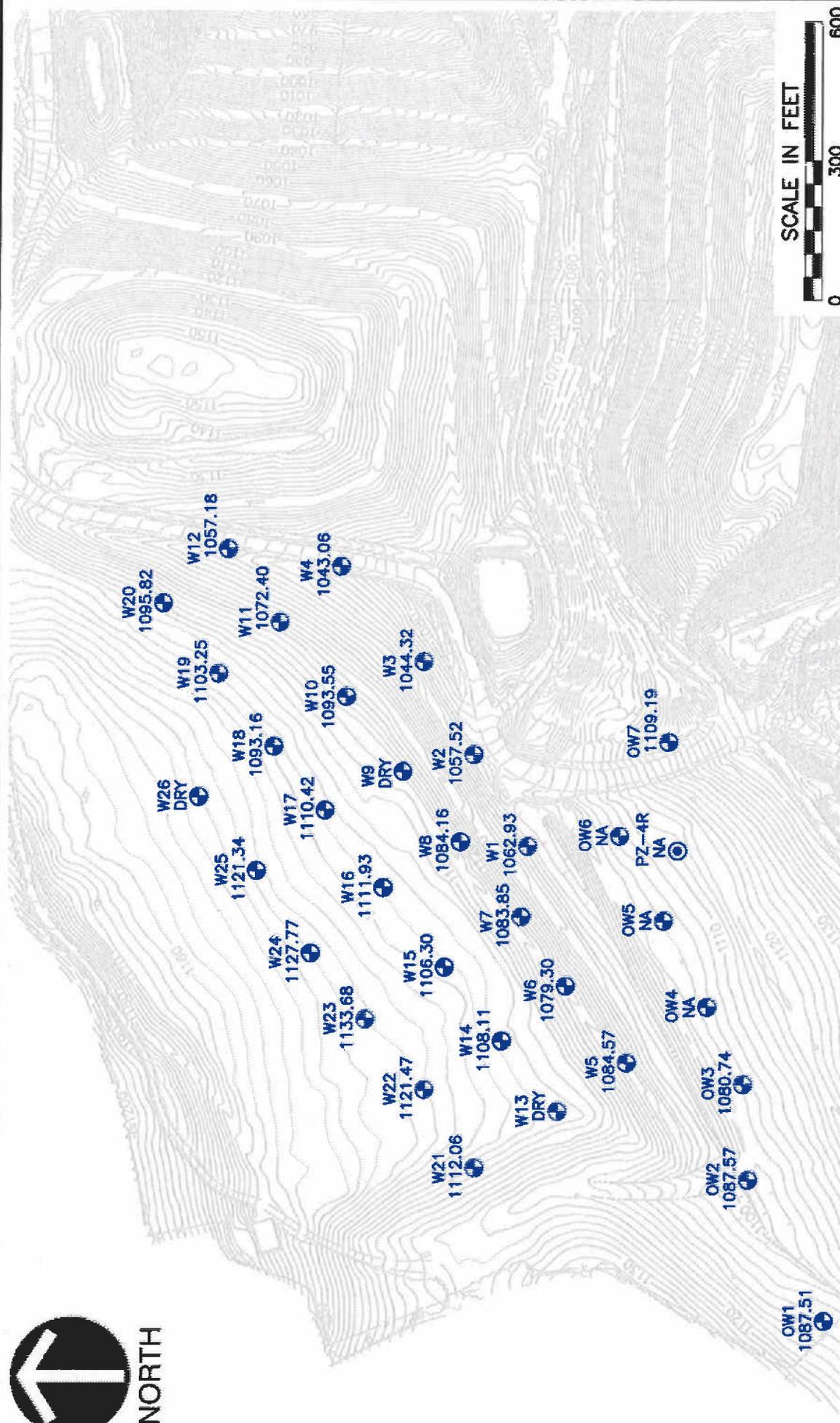
6C

**NOTE:**

1. NA - DATA NOT AVAILABLE DUE TO OBSTRUCTION IN WELL.



NORTH



**KELLY RUN SANITATION, INC. LANDFILL  
OW & WDA LEACHATE MANAGEMENT  
FORWARD TOWNSHIP, ALLEGHENY COUNTY,  
PENNSYLVANIA**

**LIQUID ELEVATION  
DECEMBER 6, 2010**

**Civil & Environmental Consultants, Inc.**  
4000 Triangle Lane, Suite 200 - Export, PA 15632-9522  
724-327-5200 · 800-899-3610  
www.cecinc.com

DRAWN BY: JHG CHECKED BY: *[Signature]*  
DATE: JAN. 5, 2011 DWG SCALE: 1"=300'

APPROVED BY: *[Signature]* FIGURE NO.: **6D**  
PROJECT NO: 101-062.AW00

**NOTE:**

1. NA - DATA NOT AVAILABLE DUE TO OBSTRUCTION IN WELL.

---

**APPENDIX A**

**OPERATION AND MAINTENANCE FORMS**

---

---

**QUARTERLY WATER LEVEL  
MEASUREMENTS AND OBSERVATIONS**

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Well Depth (ft.)	Comments
OW-1	13.91	30	
OW-2	12.27	42	
OW-3	19.68	45	
OW-4	Blocked	60	Blocked at 34.05 ft.
OW-5	Blocked	52	Blocked at <del>30.28</del> ft. 30.68 ft.
OW-6	Blocked	61	Pump Suck Near Surface.
OW-7	N/A	27	Not measured. Well is still covered with large snow piles.
PZ-4R	Monitored Quarterly	Blocked/Location Unknown	
PZ-5	Monitored Quarterly	Blocked/Location Unknown	
PZ-6	Monitored Quarterly	Blocked/Location Unknown	
PZ-7	Monitored Quarterly	Blocked/Location Unknown	
PZ-8	Monitored Quarterly	Blocked/Location Unknown	
PZ-9	Monitored Quarterly	Blocked/Location Unknown	

Measurement Date: 3-11-10  
 Technician: G. Lambie

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Total Well Depth (ft.)	Comments
W-1	39.07	50.24	
W-2	37.66	28.87	
W-3	47.15	66.73	
W-4	35.08	76.12	
W-5	24.78	46.39	
W-6	40.47	55.85	
W-7	30.48	55.47	
W-8	40.18	66.75	
W-9	DRY	29.29	TSD = 33.84
W-10	32.09	49.03	
W-11	27.70	47.15	
W-12	47.16	55.35	
W-13	20.99	21.55	
W-14	25.90	50.99	
W-15	33.81	45.11	
W-16	23.96	34.85	
W-17	25.11	39.44	
W-18	50.21	52.63	
W-19	33.95	56.89	
W-20	20.27	38.88	
W-21	22.92	33.37	
W-22	25.44	38.43	
W-23	16.70	28.44	
W-24	22.43	17.89	
W-25	28.37	34.35	
W-26	DRY	12.09	TSD = 18.31

Measurement Date: 3-11-10  
 Technician: B. Lambie

**KELLY RUN SANITATION  
OLD WASTE AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Well Depth (ft.)	Comments
OW-1	17.61	30	
OW-2	12.14	42	
OW-3	15.81	45	
OW-4	29.65	60	
OW-5	Blocked	52	Blocked at 30.23 ft.
OW-6	Blocked	61	Pump Suck Near Surface.
OW-7	22.76	27	
PZ-4R			Blocked/Location Unknown
PZ-5			Blocked/Location Unknown
PZ-6			Blocked/Location Unknown
PZ-7			Blocked/Location Unknown
PZ-8			Blocked/Location Unknown
PZ-9			Blocked/Location Unknown

Measurement Date: 6-23-10  
 Technician: B. Lambie

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Total Well Depth (ft.)	Comments
W-1	34.79	50.24	
W-2	37.71	28.87	
W-3	48.24	66.73	
W-4	51.61	76.12	
W-5	22.80	46.39	
W-6	44.72	55.85	
W-7	32.20	55.47	
W-8	31.16	66.75	
W-9	DRY	29.29	TSD = 33.75'
W-10	32.26	49.03	
W-11	36.40	47.15	
W-12	48.91	55.35	
W-13	DRY	21.55	TSD = 26.60'
W-14	30.12	50.99	
W-15	33.77	45.11	
W-16	25.52	34.85	
W-17	37.21	39.44	
W-18	50.14	52.63	
W-19	37.40	56.89	
W-20	29.79	38.88	
W-21	22.70	33.37	
W-22	25.92	38.43	
W-23	16.62	28.44	
W-24	22.46	17.89	
W-25	28.93	34.35	
W-26	DRY	12.09	TSD = 12.88' below ground surface

Measurement Date: 6-23-10  
 Technician: B. Lambie

**KELLY RUN SANITATION  
OLD WASTE AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Well Depth (ft.)	Comments
OW-1	15.18	30	
OW-2	15.64	42	
OW-3	28.46	45	
OW-4	Blocked	60	Blocked at 34.71'
OW-5	Blocked	52	Blocked at <del>30.23</del> ft. 30.39 ft.
OW-6	Blocked	61	Pump Suck Near Surface.
OW-7	22.71	27	
PZ-4R	Monitored Quarterly	Blocked/Location Unknown	
PZ-5	Monitored Quarterly	Blocked/Location Unknown	
PZ-6	Monitored Quarterly	Blocked/Location Unknown	
PZ-7	Monitored Quarterly	Blocked/Location Unknown	
PZ-8	Monitored Quarterly	Blocked/Location Unknown	
PZ-9	Monitored Quarterly	Blocked/Location Unknown	

Measurement Date: 9-29-16  
 Technician: B. Lambie

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Total Well Depth (ft.)	Comments
W-1	35.17	50.24	
W-2	38.56	28.87	
W-3	48.38	66.73	
W-4	53.94	76.12	
W-5	25.61	46.39	
W-6	40.56	55.85	
W-7	35.71	55.47	
W-8	40.92	66.75	
W-9	Dry	29.29	TSO = 33.73'
W-10	32.92	49.03	
W-11	41.30	47.15	
W-12	56.06	55.35	
W-13	Dry	21.55	TSO = 26.49'
W-14	31.62	50.99	
W-15	33.75	45.11	
W-16	26.38	34.85	
W-17	28.17	39.44	
W-18	47.16	52.63	
W-19	37.02	56.89	
W-20	31.43	38.88	
W-21	22.45	33.37	
W-22	25.95	38.43	
W-23	16.89	28.44	14.97' bog
W-24	22.52	17.89	
W-25	29.20	34.35	
W-26	Dry	12.09	TSO = 12.90' bog

Measurement Date: 9-29-10  
 Technician: B. Lambie

**KELLY RUN SANITATION  
 OLD WASTE AREA  
 WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Well Depth (ft.)	Comments
OW-1	21.72	30	
OW-2	17.28	42	
OW-3	27.48	45	
OW-4	Blocked	60	
OW-5	Blocked	52	Blocked at 30.23 ft.
OW-6	Blocked	61	Pump Suck Near Surface.
OW-7	19.03	27	
PZ-4R			Blocked/Location Unknown
PZ-5			Blocked/Location Unknown
PZ-6			Blocked/Location Unknown
PZ-7			Blocked/Location Unknown
PZ-8			Blocked/Location Unknown
PZ-9			Blocked/Location Unknown

Measurement Date: 12-16-10  
 Technician: B. Lambie

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
WATER LEVEL MEASUREMENTS AND COMMENTS**

Well ID	Depth to Water (ft.)	Total Well Depth (ft.)	Comments
W-1	33.75	50.24	
W-2	38.22	28.87	
W-3	48.04	66.73	
W-4	53.17	76.12	
W-5	26.91	46.39	
W-6	40.41	55.85	
W-7	37.19	55.47	
W-8	38.40	66.75	
W-9	33.63	29.29	
W-10	32.31	49.03	
W-11	43.67	47.15	
W-12	51.21	55.35	
W-13	Dry	21.55	TSD = 26.49
W-14	39.59	50.99	
W-15	33.61	45.11	
W-16	26.52	34.85	
W-17	27.96	39.44	
W-18	47.71	52.63	
W-19	34.79	56.89	
W-20	32.23	38.88	
W-21	22.85	33.37	
W-22	25.96	38.43	
W-23	* 16.67	28.44	* 14.67 bgs
W-24	22.49	17.89	
W-25	29.34	34.35	
W-26	Dry	12.09	TSD = 12.84 bgs

Measurement Date: 12-16-10  
 Technician: B. Lambie

---

**MONTHLY WELL MAINTENANCE  
AND PULSE COUNTER READINGS**

---

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 1-15-2010
OW-1	OK	Pump was removed and thoroughly cleaned. Pump was cycling as it should when I departed the site.
OW-2	OK	Pump was removed and thoroughly cleaned. The pump was cycling properly prior to me departing site.
OW-3	OK	Pump was removed and thoroughly cleaned. The pump was cycling properly prior to me departing site.
OW-4	OK	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. No cycle counts took place since December 2009. Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in February 2010.
OW-6	Pump Stuck	
OW-7	OK	Pump was removed and thoroughly cleaned. Pump cycling was observed. Increase in water column has led to increased production.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.



KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: OW-1  
 Date: 1-15-10  
 Technician: B. Lebbie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	65 PSI ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed + thoroughly cleaned pump Reinstalled + restarted
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was operating properly when I departed the site

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 06W-2  
 Date: 1-15-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 PSI ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed + Thoroughly cleaned pump Reinstalled + Restorted
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pressure Regulator/Gauge appeared not to be working properly. Installed new pressure regulator/gauge and new cycle counter initial reading 000, 203 All new parts and pump were working properly when I departed the site.

**KELLY RUN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-3  
 Date: 1-15-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 psi ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed + Cleaned Pump Reinstalled + Restarted
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: DW-7  
 Date: 1-15-10  
 Technician: G. Lashie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 PSI ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed + Cleaned Pump Reinstalled + retested
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump continued to cycle as it should

---



---



---



---



---



---



---



---

## Field Observation Summary Old Waste Area

Well ID	Previous Status	CEC Findings on 2-18-2010
OW-1	OK	Pump was cycling as it should, and will be removed and thoroughly cleaned in March 2010.
OW-2	OK	Pump was removed and cleaned. Air supply line to pump was discovered to be frozen. Line was cleared of ice and pump functioned properly when restarted. The pump was cycling properly prior to me departing site, but the cycle counter was not recording cycles correctly. The pump was cycling at a rate of 2 cycles per minute.
OW-3	OK	Pump was removed and cleaned. The air supply line and discharge line were frozen due to power outage (2-5-2010 through 2-12-2010). Both lines were cleared of frozen material and the pump was again cycling properly prior to me departing site.
OW-4	OK	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. No cycle counts took place since December 2009.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in February 2010.
OW-7	OK	Unable to locate well due to large snow piles (7'-8') over well location.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.



KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 0A-1  
 Date: 2-18-10  
 Technician: G. Lambie + B. Tatch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was operating as it should when we (CEC) arrived on site.  
Pump will be removed and thoroughly cleaned in March 2010.

KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: OW-2  
 Date: 2-18-10  
 Technician: G. Lambie + G. Totsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 60 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Pump was removed and cleaned. Re-installed and restarted.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was not operating when we (CFC) arrived at well location. Pump was removed and cleaned. I discovered the pump was not getting air while cleaning. Air supply line / pressure regulator were frozen due to power outage (2-5-10 through 2-12-10). Lines / regulator were cleaned of ice and pump resumed operation. Cycle counter was only working sporadically, but cycling of pump was witnessed. Pump was cycling at a rate of 2 cycles/minute.

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: OW-3  
 Date: 2-18-10  
 Technician: B. Lambic + B. Tatsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Pump was removed and cleaned Pump was <u>not</u> clogged with solids
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Upon removal of the pump, discharge line was discovered to be frozen. Efforts were made to free ice from discharge line using compressed air. Discharge line was cleared, pump was reinstalled, and restarted. Pump was cycling as it should when we departed the site.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 062-5  
 Date: 2-18-10  
 Technician: B. Lombric & B. Totsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?			Unknown
5.) Does the well require redevelopment?			Unknown

Additional Comments/Remarks: Unable to remove pump

---



---



---



---



---



---



---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 02-7  
 Date: 2-18-10  
 Technician: B. Lambie + B. Tutsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	N/A		
2.) Is there sufficient water column above pump intake?	N/A		
3.) Is there sufficient water column in the well?	N/A		
4.) Is the pump clogged with solids?	N/A		
5.) Does the well require redevelopment?	N/A		

Additional Comments/Remarks: Unable to locate well due to large (7'-8') snow mounds.  
Will service well in March.

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 3-11-2010
OW-1	OK	Pump was cycling as it should. Pump was removed and cleaned. Reinstalled and restarted.
OW-2	OK	Pump was cycling as it should, but cycle counter was still not functioning. Pump was removed and cleaned, and was observed to cycle at a rate of 4 cycles per minutes. A replacement cycle counter was installed with an initial reading of 095,991.
OW-3	OK	Pump was cycling as it should. Pump was removed and cleaned. Reinstalled and restarted.
OW-4	OK	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle 3,996 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in April 2010.
OW-7	Snow Covered	Unable to locate well due to large snow piles (7'-8') over well location.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RUIN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 3-11-10  
 Date of Last Reading: 2-18-10  
 Days Since Last Reading: 21  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	6,546,617	6,314,378	232,239	0.65	7,188.41
OW-2	1104.85	42	1,095,632	1,085,632	* * *	0.65	~1,872
OW-3	1108.22	45	3,306,919	2,849,813	458,106	<del>0.65</del>	3,490.3
OW-5	1106.61	52	1,169,117	1,165,121	3,996	0.65	123.7
OW-7	1128.22	27	* * *	* * *	* * *	0.08	* * *

Additional Comments/Remarks: OW-2 cycle counter still not working. Pump is still observed to be cycling at a rate of 2 cycles per minute on average. (More than 2 cycles per minute was observed.)  
 OW-2 production calculation: 2 cycles per minute  
 30,240 mins in 21 days  
 $2 \times 30,240 = 60,480$  cycles  
 $60,480 \text{ cycles} \div 21 \text{ days} = 2,880 \text{ cycles/day}$   
 $2,880 \text{ cycles} \times 0.65 \text{ gallons per cycle} = \sim 1,872 \text{ GPD}$

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 02-1  
 Date: 3-11-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	<i>Pump was removed and thoroughly cleaned. Reinstalled and restarted. Pump continued to cycle as it should.</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-2  
 Date: 3-11-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was cycling properly.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was cycling properly, but cycle counter was not working.  
4 cycles per minute were recorded after cleaning. Replaced cycle counter  
with another cycle counter. Initial counter reading 095,991.



KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: DW-5  
 Date: 3-11-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES		NO		Actions Taken
	YES	NO	YES	NO	
1.) Is there air pressure to the system?	✓ 90 PSI				
2.) Is there sufficient water column above pump intake?	Unknown		Unknown		Blockage encountered above pump.
3.) Is there sufficient water column in the well?	Unknown		Unknown		Blockage encountered at 30.68 feet.
4.) Is the pump clogged with solids?			✓		
5.) Does the well require redevelopment?			✓		

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 06-7  
 Date: 3-11-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	*	*	
2.) Is there sufficient water column above pump intake?			
3.) Is there sufficient water column in the well?			
4.) Is the pump clogged with solids?			
5.) Does the well require redevelopment?			

Additional Comments/Remarks: \* Unable to locate well due large snow mounds over well.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 4-19-2010
OW-1	OK	Pump was cycling as it should. Pump was removed and cleaned. Reinstalled and restarted.
OW-2	OK	Pump was cycling as it should, but cycle counter was still not functioning. Pump was observed to cycle at a rate of 4 cycles per minutes. This rate was used to calculate production over the past 39 days. A replacement cycle counter was installed with an initial reading of 923,050. This counter was cycling properly when I departed the site.
OW-3	OK	Pump was cycling as it should. Pump was removed and cleaned. Reinstalled and restarted.
OW-4	OK	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle 1,840 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in May 2010.
OW-7	Snow Covered	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. Upon removing the pump, a crack was observed in the discharge line. The line was repaired and the pump was reinstalled and restarted. The pump was operating as it should when I departed the site.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELLS  
 PNEUMATIC CYCLE PUMP COUNTER READINGS

Date: 4-19-10  
 Date of Last Reading: 3-11-10  
 Days Since Last Reading: 39  
 Technician: G. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	6,797,551	6,546,617	250,934	0.65	4,182.2
OW-2	1104.85	42	* 923,050	N/A	N/A	0.65	* 3,744
OW-3	1108.22	45	4,105,633	3,306,919	798,714	<del>0.65</del> 0.16	3,276.8
OW-5	1106.61	52	1,170,957	1,169,117	1,840	0.65	30.7
OW-7	1128.22	27	3,179,925	2,207,187 (1-15-10)	972,738	0.08	827.9 (since 1-15-10)

Additional Comments/Remarks: \* Installed new cycle counter on 4-19-10 with an initial counter reading of 923,050.

\*\* Pump was observed cycling at a rate of 4 cycles/min on 3-11-10. The pump was still cycling at this rate 4 cycles/min on 4-19-10. This rate was used to calculate the Average Equivalent Yield (Gallons per day) for this time frame.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 06J-1  
 Date: 4-19-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump Reinstalled and restarted. Pump continued to operate properly after reinstallation.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 06J-2  
 Date: 4-19-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted and pump continued to operate as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: \* Cycle counter was still not working properly Pump was cycling at a rate of 4 cycles per minute when I arrived on site. The cycle counter was replaced and cycling of the replacement was witnessed. Initial reading ~~923,050~~ 923,050

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 06J-3  
 Date: 4-19-10  
 Technician: G. Leebis  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Recovered and cleaned pump. Being talled and restarted pump. Pump contained in operate properly after reinstallation.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: D61-5  
 Date: 4-19-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	Unknown		<i>Cycles have taken place since 3-11-10. Unable to remove pump.</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 063-7  
 Date: 4-19-10  
 Technician: B. Leabie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSE		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted pump and it continued to operate as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: When pump was removed for cleaning, a crack in the discharge line was observed. The discharge line was repaired and the pump was reinstalled. The pump was operating as it should when I departed the site.

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 5-18-2010
OW-1	OK	Pump was cycling as it should. Pump was removed, disassembled and cleaned. Reinstalled and restarted.
OW-2	Replaced cycle counter.	Pump was cycling as it should and the cycle counter was functioning. The pump was operating properly when I departed the site.
OW-3	OK	Pump was cycling as it should. Pump was removed and cleaned. During cleaning, a crack teflon guide bar was discovered. The pump was replaced with a higher volume (0.65 gallons/cycle) pump. The damaged pump will be fixed and kept in case it is needed as a spare.
OW-4	Monitored Quarterly	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle 1,840 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in June 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 5-18-10  
 Date of Last Reading: 4-19-10  
 Days Since Last Reading: 39  
 Technician: D. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,062,215	6,797,551	264,664	0.65	5932.1
OW-2	1104.85	42	938,314	923,050	15,264	0.65	342.1
OW-3	1108.22	45	4,893,260	4,105,633	787,627	<del>0.16</del> 0.16	4345.5
OW-5	1106.61	52	1,174,895	1,170,957	3,938	0.65	88.3
OW-7	1128.22	27	3,327,030	3,179,925	47,095	0.08	129.9

Additional Comments/Remarks: Replaced pump at OW-3 due to a cracked teflon guide bar. Replacement pump will produce a higher volume (0.65 gal/cycle) than the old pump. The damaged pump will be repaired and kept as a spare.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 062-1  
 Date: 5-18-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Reassembled, reinstalled and restarted pump. Pump was cycling as it should when I departed the site
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was operating properly when I arrived on site

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 063-2  
 Date: 5-18-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed, disassembled and thoroughly cleaned pump. Pump was clogged with solids inside. Removed all solids, reinstalled and restarted pump. Pump was operating as it should when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 06W-3  
 Date: 5-18-10  
 Technician: G. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and disassembled pump. While cleaning pump, I noticed a cracked teflon guide bar. I replaced the damaged pump with a spare, higher volume pump. (0.65 gal/cycle) The damaged pump will be repaired and kept until needed to replace another pump.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Removed damaged pump and replaced with a higher volume (0.65 spk gal/cycle) pump

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 061-5  
Date: 5-18-10  
Technician: B. Lambie  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	Unknown		Pump cannot be removed. Pump has cycled ~ 4,000 cycles since 4-19-10.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

KELLY RUIN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: OW-7  
 Date: 5-18-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. The pump was cycling properly when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 6-23-2010
OW-1	OK	Pump was cycling as it should. Pump was removed, disassembled and cleaned. Reinstalled and restarted.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. The pump was operating properly when I departed the site.
OW-3	Replaced damaged pump with higher volume (0.65 gallons per cycle)	Pump was cycling as it should. Pump was removed, disassembled and cleaned. Reinstalled and restarted.
OW-4	Monitored Quarterly	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle 3,506 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in July 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site.
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.



**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 06J-1  
 Date: 6-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 70 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	<i>Removed and thoroughly cleaned pump. Reinstalled and restarted. Pumped continued to operate properly</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 062-2  
 Date: 6-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 70 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump. Reinstalled and restarted. Pump continued to operate properly.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: DW-3  
 Date: 6-23-16  
 Technician: B. Kambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 50 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump Reinstalled and restarted. Pump was operating as it should when I departed the site
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---



**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: D62-7  
 Date: 6-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	<i>Removed and cleaned pump. Reinstalled and restarted. Pump continued to operate properly</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 7-27-2010
OW-1	OK	Pump was not cycling when I arrived on site. Pump was removed, disassembled and cleaned. Discharge line was clogged with solids. I replaced the discharge line and reinstalled and restarted the pump. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	OK	Pump was not cycling as it should when I arrived on site. Pump was removed, disassembled and a repair was made to the guide bar. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Monitored Quarterly	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 8,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in August 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.



KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 065-1  
 Date: 7-27-16  
 Technician: B. Lombrice  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓	NM	Removed and cleaned pump. Discharge line was clogged and unable to clear. Replaced discharge line pump was operating as it should when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Replaced discharge line.

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-2  
Date: 7-27-10  
Technician: B. Lambie  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed and thoroughly cleaned pump. Reinstalled and Restarted Pump was cycling as it should when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 64-3  
Date: 7-27-10  
Technician: B. Lebbie  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump Replaced a part on the float Reinstalled and restarted and pump was cycling properly
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 04-5  
 Date: 7-27-10  
 Technician: B. Lombic  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	Unknown		Unable to remove pump
5.) Does the well require redevelopment?	Unknown		

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 04J-7  
 Date: 7-27-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓	✓	Limited water column in well is leading to decreased production.
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was operating as it should when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 8-24-2010
OW-1	Discharge Line Blocked	Pump was not cycling when I arrived on site. Pump was removed, disassembled and cleaned. The discharge line outside of the well casing was "kinked", limiting flow. Steps were taken to remove the "kink". A new fitting will be installed in place of the damaged fitting prior to the next maintenance event. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	Damaged Guide Bar	Pump was not cycling as it should when I arrived on site. I removed, disassembled, and cleaned the pump. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Monitored Quarterly	
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 9,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in September 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.



**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: DW-1  
 Date: 8-24-10  
 Technician: B. Lashie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled and thoroughly cleaned pump. Reassembled, reinstalled, and restarted pump. Pump was cycling properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: A "kink" in the discharge line was present outside of the well. The line was raised by placing blocks under it to remove the "kink." A new fitting will replace the damaged one prior to the next maintenance event. The blocked discharge line has led to reduced production in July/August.

KELLY RUM SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: Δ63-2  
 Date: 8-24-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Remained disassembled, and thoroughly cleaned pump. Reassembled, reinstalled, and retested pump. Pump continued to cycle as it should after re-start.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---



---



---



---



---



---



---



---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 063-3  
 Date: 8-24-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Steel washer on bottom of foam float was loose due to a missing screw. Replaced screw, reassembled pump and restarted.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 063-5  
 Date: 8-24-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	Unknown		
3.) Is there sufficient water column in the well?	Unknown		
4.) Is the pump clogged with solids?	Unknown		Unable to remove pump from well. Pump has cycled 9,228 times since previous counter reading in July 2010.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: D 65-7  
 Date: 8-24-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 9-29-2010
OW-1	Discharge Line Blocked	Pump was not cycling when I arrived on site. Pump was removed, disassembled and cleaned. The discharge line outside of the well casing was "kinked", limiting flow. Steps were taken to remove the "kink". A new fitting will be installed in place of the damaged fitting prior to the next maintenance event. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	OK	Pump was cycling as it should when I arrived on site. I removed, disassembled, and cleaned the pump. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Blocked	Blocked at 34.71'
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 1,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in October 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RUN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 9-29-10  
 Date of Last Reading: 8-24-10  
 Days Since Last Reading: 36  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,330,067	7,329,306	761	0.65	13.74
OW-2	1104.85	42	1,613,849	1,465,801	148,048	0.65	2673.09
OW-3	1108.22	45	5,083,234	4,998,830	84,394	0.65	1523.78
OW-5	1106.61	52	1,196,829	1,195,432	1,197	0.65	21.61
OW-7	1128.22	27	3,312,649	3,295,413	17,236	0.08	38.30

Additional Comments/Remarks:

---



---



---



---



---



---



---



---



---



---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OWJ-1  
 Date: 9-29-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓		
2.) Is there sufficient water column above pump intake?	80 PSI ✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed disassembled and thoroughly cleaned pump Reinstalled and restarted pump. Pump was operating as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Discharge line outside of casing still needs to be repaired. Spoke with Steve about the problem

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OLJ-2  
 Date: 9-29-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system? ✓	✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and cleaned pump. Reassembled and reinstalled and retested pump. Pump was cycling properly after retest
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-3  
 Date: 9-29-10  
 Technician: B. Leebie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted pump. Pump continued to cycle properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 013-5  
Date: 9-29-10  
Technician: B. Lemble  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	Unknown		
3.) Is there sufficient water column in the well?	Unknown		
4.) Is the pump clogged with solids?	Unknown		Pump cycled over 1,000 cycles since previous reading
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-7  
 Date: 9-19-9  
 Technician: B. Lombie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	<input checked="" type="checkbox"/> 80 PSI	<input type="checkbox"/>	
2.) Is there sufficient water column above pump intake?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Water level draws down leading to lower production.
3.) Is there sufficient water column in the well?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4.) Is the pump clogged with solids?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Removed and cleaned pump. Reinstalled and restarted pump. Pump was operating properly after restart.
5.) Does the well require redevelopment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 10-21-2010
OW-1	"Kinked discharge line"	Pump was removed, disassembled and cleaned. The discharge line outside of the well casing was replaced. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	OK	Pump was cycling as it should when I arrived on site. I removed, disassembled, and cleaned the pump. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Blocked	Blocked at 34.71'
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 1,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in November 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 10-21-10  
 Date of Last Reading: 9-29-10  
 Days Since Last Reading: 22  
 Technician: B. Lombis

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,734,050	7,330,067	403,983	0.65	11,935.86
OW-2	1104.85	42	1,724,932	1,613,849	111,083	0.65	3,282.0
OW-3	1108.22	45	5,116,633	5,083,224	33,409	0.65	969.36
OW-5	1106.61	52	1,196,829	1,196,829	—	0.65	—
OW-7	1128.22	27	3,312,846	3,312,649	197	0.08	0.72

Additional Comments/Remarks:

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 063-1  
 Date: 10-21-10  
 Technician: B. Loochie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 70 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted pump. Pump continued to operate as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-2  
 Date: 10-21-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		<i>Removed, disassembled, and thoroughly cleaned pump</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 012-3  
 Date: 10-31-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 012-5  
 Date: 10-21-10  
 Technician: B. Leach  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	Unknown		
3.) Is there sufficient water column in the well?	Unknown		
4.) Is the pump clogged with solids?	Unknown		
5.) Does the well require redevelopment?	Unknown		

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 00-7  
 Date: 10-21-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 PSI ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and retested. Pump cycling was observed.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Cycle counter would not work properly. Installed replacement cycle counter, but it would also not function. Pump cycling was observed at a rate of 4 cycles per minute.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 11-23-2010
OW-1	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	OK	Pump was cycling as it should when I arrived on site. I removed, disassembled, and cleaned the pump. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Blocked	Blocked at 34.71'
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 1,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in October 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RUN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 11-23-10  
 Date of Last Reading: 10-21-10  
 Days Since Last Reading: 33  
 Technician: B. L. ...

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,789,517	7,734,050	55,467	0.65	1,092.5
OW-2	1104.85	42	1,900,783	1,724,932	175,851	0.65	3,963.7
OW-3	1108.22	45	5,183,784	5,116,033	67,751	0.65	1,334.5
OW-5	1106.61	52	1,197,985	1,196,829	1,156	0.65	22.8
OW-7	1128.22	27	3,313,056	3,312,846	210	0.08	0.5

Additional Comments/Remarks:

---



---



---



---



---



---



---



---

KELLY RUN SANITATION  
 OLD WASTE AREA  
 LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: OW-1  
 Date: 11-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled and thoroughly cleaned pump. Reinstalled and restarted pump. After restart pump continued to operate as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-2  
 Date: 11-23-10  
 Technician: B. Leach  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---



---



---



---



---



---



---



---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 061-3  
 Date: 11-23-10  
 Technician: B. Lumbie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed disassembled and thoroughly cleaned pump. Reinstalled and restarted. Pump continued to operate properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---



---



---



---



---



---



---



**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 063-7  
 Date: 11-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	<i>Removed, disassembled, and thoroughly cleaned pump. Reinstalled and restarted pump. After restart pump continued to cycle properly.</i>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---



---



---



---



---



---



---



---



---



---

**Field Observation Summary  
Old Waste Area**

Well ID	Previous Status	CEC Findings on 12-16-2010
OW-1	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-2	OK	Pump was cycling as it should and the cycle counter was functioning. I removed, disassembled, and cleaned the pump. The pump was operating properly when I departed the site.
OW-3	OK	Pump was cycling as it should when I arrived on site. I removed, disassembled, and cleaned the pump. I reinstalled and restarted the pump and it was operating properly when I departed the site.
OW-4	Blocked	Blocked at 34.71'
OW-5	Unable to remove pump.	Attempts to remove were unsuccessful. Pump did cycle over 3,000 cycles since previous reading.
OW-6	Pump Stuck	Pump is stuck near surface. The pump was hooked, but could not be removed. Further steps will be taken to remove pump in October 2010.
OW-7	OK	Pump was cycling as it should when I arrived at the well location. The pump was removed and cleaned. The pump was operating as it should when I departed the site. A limited water column in the well is leading to slightly decreased production volume
PZ-4R	Blocked/Location Unknown	Unable to locate well.
PZ-5	Blocked/Location Unknown	Unable to locate well.
PZ-6	Blocked/Location Unknown	Unable to locate well.
PZ-7	Blocked/Location Unknown	Unable to locate well.
PZ-8	Blocked/Location Unknown	Unable to locate well.
PZ-9	Blocked/Location Unknown	Unable to locate well.

**KELLY RIN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 12-16-10  
 Date of Last Reading: 11-23-10  
 Days Since Last Reading: 23  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,829,553	7,789,517	40,036	0.65	1131.45
OW-2	1104.85	42	1,974,560	1,900,783	73,777	0.65	3085.00
OW-3	1108.22	45	5,222,352	5,183,784	38,568	0.65	1089.97
OW-5	1106.61	52	1,201,303	1,197,785	3,518	0.65	99.42
OW-7	1128.22	27	3,321,170	3,312,846	8,324	0.08	28.95

Additional Comments/Remarks:

---



---



---



---



---



---



---



---



---



---

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: DW-1  
 Date: 12-16-10  
 Technician: D. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 25 PSI		Removed and checked all lines on pump. No blockages were found. The lack of pressure must be due to supply lines from compressor. Notified Steve (WM) of problem and he said he would check into it.
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was operating as it should. *
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: \* Low pressure was causing slower cycling and also caused cycle counter not to function. The pump was observed for several minutes cycling at a rate of 4 cycles per minute. 3 cycles per minute will be used to calculate volume of production if cycle counter continues not to work.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: DW-2  
 Date: 12-16-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 25 PSI		SEE DW-1 Summary sheet
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was operating as it should. With slower cycles due to low pressure.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was observed for several minutes and was consistently cycling at a rate of 2 cycles per minute. The cycle counter was not cycling properly due to the low pressure.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-3  
 Date: 12-16-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 25 PSI		SEE OW-1 Summary Sheet
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was operating as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was observed for several minutes, consistently cycling at a rate of 2 cycles per minute. The cycle counter was not working properly due to the low pressure.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-5  
 Date: 12-16-10  
 Technician: B. Lombie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 20 PSI		
2.) Is there sufficient water column above pump intake?	Unknown		
3.) Is there sufficient water column in the well?	Unknown		
4.) Is the pump clogged with solids?	Unknown		Pump cycled more than 3,000 cycles since the previous event.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: OW-7  
 Date: 12-16-10  
 Technician: G. Lombie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 20 PSI		SEE Summary Sheet for OW-1
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump was operating as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was observed for several minutes cycling at a rate of 10 cycles per minute. The cycle counter was not working properly due to the low pressure.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

**CEC Findings on 1-15-2010**

Well ID	Previous Status	CEC Findings on 1-15-2010
W-1	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	Pump is not functioning and is "stuck" in well.
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	Pump previously here is in W-19.	Pump from W-19 was removed, cleaned and reinstalled at W-15.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump from W-15 installed here.	Limited water column. Pump was removed, cleaned and moved to W-15.
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 1-15-10  
 Date of Last Reading: 12-11-09  
 Days Since Last Reading: 35  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,467,400	3,309,976	157,424	0.08	359,823
W-15	1139.91	45.11	003,154			0.15	
W-18	1140.87	52.63	426,855	417,115	9,740	0.15	41.74
W-19	1138.04	56.89	003,154	000,540	2,614	0.15	11.20

Additional Comments/Remarks: Moved pump from W-19 to W-15. due to limited water column in W-19

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: 43-1  
 Date: 1-15-10  
 Technician: B. L. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES		NO		Actions Taken
	YES	NO	YES	NO	
1.) Is there air pressure to the system?	95 PSI ✓				
2.) Is there sufficient water column above pump intake?	✓				
3.) Is there sufficient water column in the well?	✓				
4.) Is the pump clogged with solids?	✓				Pump was removed + cleaned. Reinstalled + restarted
5.) Does the well require redevelopment?				✓	

Additional Comments/Remarks: Pump was cycling properly when I departed the site

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: W-15  
 Date: 1-15-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 PSI ✓		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Installed pump in W-15 on 1-15-10. Initial counter reading 003,154.  
Pump was cycling as it should when I departed the site.

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: WJ-18  
 Date: 1-15-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES		NO		Actions Taken
	YES	NO	YES	NO	
1.) Is there air pressure to the system?	65 PSI				
2.) Is there sufficient water column above pump intake?	✓				
3.) Is there sufficient water column in the well?	✓				
4.) Is the pump clogged with solids?			✓		Pump was removed + cleaned Reinstalled + restarted.
5.) Does the well require redevelopment?			✓		

Additional Comments/Remarks: Pump was operating as it should when I departed the site.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: WJ-19  
 Date: 1-15-10  
 Technician: D. Labbie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	80 PSI ✓		
2.) Is there sufficient water column above pump intake?		✓	Removed pump from W-19. Placed pump in W-15
3.) Is there sufficient water column in the well?		✓	
4.) Is the pump clogged with solids?	✓		Removed + thoroughly cleaned pump. Reinstalled pump to W-15 and restarted.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was moved from W-19 to W-15 due to limited water column.

**Field Observation Summary  
Western Disposal Area**

**CEC Findings on 2-18-2010**

Pump was removed, completely disassembled and cleaned. Pump discharge line was clogged with solids. Solids were cleared from discharge line. Pump air supply line was frozen. Air supply line was cleared. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.

Well ID	Previous Status	
W-1	Pump Working Properly.	
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	Pump is not functioning and is "stuck" in well.
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	Pump from W-19 was removed, cleaned and reinstalled at W-15.	Pump was functioning properly. Will be removed and thoroughly cleaned in March.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 2-18-10  
 Date of Last Reading: 1-15-10  
 Days Since Last Reading: 34  
 Technician: A. Lambie + B. Tetsch

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,467,718	3,467,400	318	0.08	0.75
W-15	1139.91	45.11	015,674	003,154	12,520	0.15	55.34
W-18	1140.87	52.63	436,119	426,855	9,264	0.15	39.7
W-19	1138.04	56.89	Moved to	62-15 on	1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-1  
 Date: 2-18-10  
 Technician: G. Lumbie + B. Tutsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 100 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		<u>Pump was removed and cleaned Reinstalled and restarted.</u>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was not cycling when we (EEC) arrived at well location  
 After removing and cleaning pump, discharge line clog was discovered  
 along with air supply line freezing. Air supply line was cleared  
 of ice, and discharge line was cleared of solids which caused  
 the clog. After reinstalling and restarting pump, it was cycling as  
 it should.



**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-18  
 Date: 2-18-10  
 Technician: B. Lambie + B. Totsch  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 70 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	<u>Pump was cycling properly.</u>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump will be removed and thoroughly cleaned in March, 2010.

---

---

---

---

---

---

---

---

---

---

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 3-11-2010
W-1	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	OK	
W-3	OK	
W-4	OK	
W-5	OK	
W-6	OK	
W-7	OK	
W-8	OK	
W-9	OK	
W-10	OK	
W-11	OK	
W-12	OK	Pump is not functioning and is "stuck" in well.
W-13	OK	
W-14	OK	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	OK	
W-17	OK	
W-18	Pump Working Properly.	
W-19	Pump moved to W-15 on 1-15-2010 .	
W-20	OK	
W-21	OK	
W-22	OK	
W-23	OK	
W-24	OK	
W-25	OK	
W-26	OK	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 3-11-10  
 Date of Last Reading: 3-18-10  
 Days Since Last Reading: 31  
 Technician: B. Lombie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,679,033	3,467,718	211,315	0.08	805.0
W-15	1139.91	45.11	33,582	15,674	17,908	0.15	127.9
W-18	1140.87	52.63	447,691	426,855	20,836	0.15	148.8
W-19	1138.04	56.89	Moved pump to 13-15	13-15	1-15-10	0.15	

Additional Comments/Remarks:

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-1  
 Date: 3-11-10  
 Technician: B. Lemble  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 40 PSI		Checked pressures again prior to departing site. Reading was 80 PSI
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump Reinstalled and restarted. Pump was cycling as it should after restart
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: W-5  
 Date: 3-11-10  
 Technician: G. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 50 PSI		Checked pressures again prior to departing site. Reading was 80 PSI
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump. Reinstalled and retested Pump was operating as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was operating properly when I arrived at well location.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 62-18  
 Date: 3-11-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	<input checked="" type="checkbox"/> 50 PSI	<input type="checkbox"/>	Checked pressures again prior to departing site. Reading was 80 PSI
2.) Is there sufficient water column above pump intake?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water level has declined since previous readings
3.) Is there sufficient water column in the well?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.) Is the pump clogged with solids?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5.) Does the well require redevelopment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments/Remarks: Pump has cycled ~ 20,000 cycles since February. Pump was removed and cleaned.  
Reinstalled pump here. Water levels may return to sufficient levels, if not pump will  
be removed in April

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 4-19-2010
W-1	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 4-19-10  
 Date of Last Reading: 3-11-10  
 Days Since Last Reading: 39  
 Technician: B. Lombie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,692,457	3,679,033	13,424	0.08	27.5
W-15	1139.91	45.11	66,352	33,582	32,770	0.15	126.0
W-18	1140.87	52.63	469,017	447,691	<del>21,326</del> 21,326	0.15	<del>142.1</del> 82.0
W-19	1138.04	56.89		Moved pump to 12-15 on 4-15-10		0.15	—

Additional Comments/Remarks:







**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 5-18-2010
W-1	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	Pump Working Properly.	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump moved to W-15 on 1-15-2010 .	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 5-18-10  
 Date of Last Reading: 4-19-10  
 Days Since Last Reading: 29  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,692,798	3,692,457	341	0.08	0.9
W-15	1139.91	45.11	86,049	66,352	19,697	0.15	101.9
W-18	1140.87	52.63	482,805	469,017	13,788	0.15	71.3
W-19	1138.04	56.89	Moved Pump to W-15 on 1-15-10			0.15	

Additional Comments/Remarks:

---



---



---



**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: WJ-15  
 Date: 5-18-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and disassembled pump and thoroughly cleaned, reassembled, reinstalled, and restarted pump. Pump was operating as it should.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 63-18  
 Date: 5-18-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and disassembled pump. Thoroughly cleaned pump then reassembled, reinstalled, and restarted. Pump continued to operate properly
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 6-23-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	OK	
W-3	OK	
W-4	OK	
W-5	OK	
W-6	OK	
W-7	OK	
W-8	OK	
W-9	OK	
W-10	OK	
W-11	OK	
W-12	OK	
W-13	OK	
W-14	OK	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	OK	
W-17	OK	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	OK	
W-21	OK	
W-22	OK	
W-23	OK	
W-24	OK	
W-25	OK	
W-26	OK	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 6-23-10  
 Date of Last Reading: 5-18-10  
 Days Since Last Reading: 35  
 Technician: B. Lambie

Well ID	Well Elevation (famsf)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)	
W-1	1096.68	50.24	3,727,104	3,692,798	34,306	0.08	78.4	
W-15	1139.91	45.11	110,754	86,049	24,705	0.15	105.9	
W-18	1140.87	52.63	503,818	482,805	21,013	0.15	90.1	
W-19	1138.04	56.89	Moved Pump to W-15 on 1-15-10					—

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUIN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 4)-1  
 Date: 6-23-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump. Reinstalled and restarted. Pump was operating properly when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 6J-18  
 Date: 6-23-10  
 Technician: G. Lorbie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump. Reinstalled and restarted. Pump was working as it should when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 7-27-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 7-27-10  
 Date of Last Reading: 6-23-10  
 Days Since Last Reading:  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	<del>3,822,005</del>	3,727,104	94,901	0.08	223.3
W-15	1139.91	45.11	<del>128,885</del>	110,754	18,131	0.15	80.0
W-18	1140.87	52.63	514,127	503,818	10,309	0.15	45.5
W-19	1138.04	56.89	Moved pump to 15-15		on 1-15-10	0.15	

Additional Comments/Remarks:

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: WJ-1  
 Date: 7-27-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	<input checked="" type="checkbox"/> 80 PSI	<input type="checkbox"/>	
2.) Is there sufficient water column above pump intake?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.) Is there sufficient water column in the well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.) Is the pump clogged with solids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Removed and thoroughly cleaned pump. Reinstalled and restarted. Pump was operating as it should when I departed the site.
5.) Does the well require redevelopment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-15  
 Date: 7-27-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed, disassembled, and thoroughly cleaned pump. Removed thick tar-like product from intake. Reinstalled and restarted pump. Pump was cycling properly when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-18  
 Date: 4/7-27-10  
 Technician: B. Loubie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and cleaned pump. Reinstalled and restarted. Pump continued to cycle properly
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 8-24-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site. Limited water column is leading to decrease in production.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 8-24-10  
 Date of Last Reading: 7-27-10  
 Days Since Last Reading: 28  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,826,353	3,822,005	4,348	0.08	12.4
W-15	1139.91	45.11	141,907	128,885	13,022	0.15	69.8
W-18	1140.87	52.63	515,569	514,127	1,437	0.15	7.7
W-19	1138.04	56.89	Moved pump to W-15 on 1-15-10.			0.15	—

Additional Comments/Remarks: The air compressor that supplies air to the leachate pumps was not running when I arrived on site at 7:00 AM

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 65-1  
Date: 8-24-10  
Technician: B. Lambie  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓		
2.) Is there sufficient water column above pump intake?	8 PSI ✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed disassembled and thoroughly cleaned pump. Reassembled, reinstalled and restarted pump. Pump was cycling properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 43-15  
 Date: 8-24-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Re-assembled, reinstalled, and restarted pump. Pump was cycling as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 60-18  
 Date: 8-24-10  
 Technician: C. Leach  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 78 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Reassembled, reinstalled, and restarted pump. Pump was cycling as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 9-29-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	OK	
W-3	OK	
W-4	OK	
W-5	OK	
W-6	OK	
W-7	OK	
W-8	OK	
W-9	OK	
W-10	OK	
W-11	OK	
W-12	OK	
W-13	OK	
W-14	OK	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	OK	
W-17	OK	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site. Limited water column is leading to decrease in production.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	OK	
W-21	OK	
W-22	OK	
W-23	OK	
W-24	OK	
W-25	OK	
W-26	OK	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 9-29-10  
 Date of Last Reading: 8-24-10  
 Days Since Last Reading: 36  
 Technician: B. Lombie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,868,237	3,826,353	41,884	0.08	93.08
W-15	1139.91	45.11	159,003	141,907	17,096	0.15	71.23
W-18	1140.87	52.63	537,592	515,564	22,028	0.15	91.78
W-19	1138.04	56.89	Moved pump to W-15 on 7-15-10			0.15	—

Additional Comments/Remarks:

---



---



---

KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST

Well ID: W-1  
 Date: 9-29-10  
 Technician: B. Lombie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Reassembled, reinstalled, and restarted pump. Pump was operating properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 61-15  
 Date: 7-29-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed and thoroughly cleaned pump. Reinstalled and restarted pump. Pump was cycling properly after reinstallation.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: WJ-18  
Date: 9-29-10  
Technician: B. Lambie  
Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled and thoroughly cleaned pump. Reassembled, reinstalled and restarted pump. Pump was cycling properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 10-21-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site. Limited water column is leading to decrease in production.
W-19	Pump moved to W-15 on 1-15-2010 .	
W-20	Monitored Quarterly	
W-21	Monitored Quarterly	
W-22	Monitored Quarterly	
W-23	Monitored Quarterly	
W-24	Monitored Quarterly	
W-25	Monitored Quarterly	
W-26	Monitored Quarterly	

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 10-21-10  
 Date of Last Reading: 9-29-10  
 Days Since Last Reading: 22  
 Technician: B. Lemble

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,868,365	3,868,237	68	0.08	0.15
W-15	1139.91	45.11	171,558	159,003	12,555	0.15	85.60
W-18	1140.87	52.63	536,559	537,592	18,967	0.15	129.32
W-19	1138.04	56.89	Noted pump to	6-15 on	1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 6J-1  
 Date: 10-21-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 80 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed, disassembled and thoroughly cleaned. Pump removed, blockage from discharge line. Reinstalled and restarted pump. Pump was operating properly when I departed the site.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

---

---

---

---

---

---

---

---

---

---



**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: WJ-18  
 Date: 10-31-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassembled, and thoroughly cleaned pump. Reassembled, reinstalled, and restarted pump. Pump continued to cycle as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 11-23-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	
W-3	Monitored Quarterly	
W-4	Monitored Quarterly	
W-5	Monitored Quarterly	
W-6	Monitored Quarterly	
W-7	Monitored Quarterly	
W-8	Monitored Quarterly	
W-9	Monitored Quarterly	
W-10	Monitored Quarterly	
W-11	Monitored Quarterly	
W-12	Monitored Quarterly	
W-13	Monitored Quarterly	
W-14	Monitored Quarterly	
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	
W-17	Monitored Quarterly	
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site. Limited water column is leading to decrease in production.
W-19	Pump moved to W-15 on 1-15-2010.	
W-20	OK	
W-21	OK	
W-22	OK	
W-23	OK	
W-24	OK	
W-25	OK	
W-26	OK	

**KELLY RUIJ SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 11-23-10  
 Date of Last Reading: 10-21-10  
 Days Since Last Reading: 33  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,907,025	3,868,305	38,720	0.08	93.9
W-15	1139.91	45.11	183,418	171,558	11,860	0.15	53.9
W-18	1140.87	52.63	562,184	556,559	5,625	0.15	25.6
W-19	1138.04	56.89	Moved pump to 12-15 on 1-15-10			0.15	

Additional Comments/Remarks:

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-1  
 Date: 11-23-10  
 Technician: B. Lombie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 95 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		<u>Removed disassembled and thoroughly cleaned pump. Reinstalled and restarted.</u>
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-15  
 Date: 11-23-10  
 Technician: B. Lobbie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 90 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	<del>✓</del>	✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 65-18  
 Date: 11-23-16  
 Technician: B. Lemble  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 75 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	Removed, disassemble, and thoroughly cleaned pump. Reinstalled and restarted. Pump continued to cycle as it should after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Field Observation Summary  
Western Disposal Area**

Well ID	Previous Status	CEC Findings on 12-16-2010
W-1	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-2	Monitored Quarterly	OK
W-3	Monitored Quarterly	OK
W-4	Monitored Quarterly	OK
W-5	Monitored Quarterly	OK
W-6	Monitored Quarterly	OK
W-7	Monitored Quarterly	OK
W-8	Monitored Quarterly	OK
W-9	Monitored Quarterly	OK
W-10	Monitored Quarterly	OK
W-11	Monitored Quarterly	OK
W-12	Monitored Quarterly	OK
W-13	Monitored Quarterly	OK
W-14	Monitored Quarterly	OK
W-15	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site.
W-16	Monitored Quarterly	OK
W-17	Monitored Quarterly	OK
W-18	OK	Pump was removed, completely disassembled and cleaned. Pump was reinstalled and restarted. Pump was functioning properly when I departed the site. Limited water column is leading to decrease in production.
W-19	Pump moved to W-15 on 1-15-2010.	OK
W-20	Monitored Quarterly	OK
W-21	Monitored Quarterly	OK
W-22	Monitored Quarterly	OK
W-23	Monitored Quarterly	OK
W-24	Monitored Quarterly	OK
W-25	Monitored Quarterly	OK
W-26	Monitored Quarterly	OK

**KELLY RUIN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 12-16-10  
 Date of Last Reading: 11-23-10  
 Days Since Last Reading: 23  
 Technician: B. Lumbie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	4,590,545	3,868,305	722,240	0.08	2512.14
W-15	1139.91	45.11	194,863	183,418	11,445	0.15	74.64
W-18	1140.87	52.63	582,575	556,559	26,016	0.15	169.67
W-19	1138.04	56.89	Moved pump to W-15 on 1-15-10			0.15	

Additional Comments/Remarks:

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-1  
 Date: 12-16-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 70 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?	✓		Removed, disassembled and thoroughly cleaned pump. Reinstalled and restarted. Pump continued to cycle properly after restart.
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: Pump was cycling properly when I arrived at the well location but the cycle counter was not functioning. I replaced the cycle counter with another counter with an initial reading of 895,829. I also replaced the damaged support cable on the pump.

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: W-15  
 Date: 12-16-10  
 Technician: B. Lohme  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓ 85 PSI		
2.) Is there sufficient water column above pump intake?	✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**KELLY RIN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELL OPERATION AND MAINTENANCE CHECKLIST**

Well ID: 63-18  
 Date: 12-16-10  
 Technician: B. Lambie  
 Approximate Yield: \_\_\_\_\_

Condition	YES	NO	Actions Taken
1.) Is there air pressure to the system?	✓		
2.) Is there sufficient water column above pump intake?	75 PSI ✓		
3.) Is there sufficient water column in the well?	✓		
4.) Is the pump clogged with solids?		✓	
5.) Does the well require redevelopment?		✓	

Additional Comments/Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

---

**APPENDIX B**

**PULSE COUNTER READINGS  
OLD WASTE AREA AND WESTERN DISPOSAL AREA WELLS**

---

APPENDIX B  
 OLD WASTE AREA  
 PULSE COUNTER READINGS  
 KELLY RUIN SANITATION  
 FORWARD TOWNSHIP, PENNSYLVANIA

WELL ID	START VALUE (cycle)	CONVERSION (gal/cycle)	1ST QTR. READ (cycle)	1ST QTR. PROD. (gal)	2ND QTR. READ (cycle)	2ND QTR. PROD. (gal)	3RD QTR. READ (cycle)	3RD QTR. PROD. (gal)	4TH QTR. READ (cycle)	4TH QTR. PROD. (gal)	YEAR TO DATE PRODUCTION	DATE	DAYS PASSED
OW-1	5,531,091	0.65	6,546,617	660,091.9	7,309,667	495,982.5	7,530,367	13,455.0	7,629,553	324,470.9	1,494,000.3	12/16/2010	365
OW-2	875,573	0.65	1,095,632	182,350.4	***1,155,058	150,805.2	1,613,949	298,214.2	1,974,560	234,462.2	865,832.0	12/16/2010	365
OW-3	1,721,537	0.16 and 0.65	3,306,919	253,661.1	4,683,260	253,814.6	5,227,352	123,476.6	5,227,352	90,433.2	721,385.5	12/16/2010	365
OW-5	1,165,121	0.65	1,166,117	2,397.4	1,178,401	6,034.6	1,196,629	11,978.2	1,201,303	2,908.1	23,518.3	12/16/2010	365
OW-7	1,292,185	0.08	2,207,187	*****	3,281,722	65,962.8	3,312,649	20,102.6	3,321,170	5,538.7	111,604.0	12/16/2010	365
Gallons produced per quarter Equivalent days of production Minimum prod. quota per qtr. No. days per quarter Percent of prod. quota per qtr.													
1,098,701 219.74 490,000 90 244.16%													
487,227 93.45 480,000 92 101.57%													
637,613 131.56 480,000 92 143.00%													
Total Production to date Total to date Quota Percent of to-date Quota Equivalent days of production Equivalent Date per Quota Full year quota Percent of full year quota													
3,216,340.03 gal 1,825,000.00 gal 176.24% 643.27 day 10/6/2011 1,825,000.00 gal 176.24%													

\*\*\* Cycle counter at OW-2 did not function properly between 2-18-2010 and 4-19-2010. The pump was cycling at an average rate of 2 cycles per minute (more than 2 cycles per minute was observed) on 2-18-2010. The pump was still cycling on 3-11-2010 at an average 2 cycles per minute. The production of this well based on an average of 2 cycles per minute for the time between 2-18-2010 and 3-11-2010 was 39,312 gallons. Total production for the first quarter based on cycle counter readings and calculated volumes is 182,350.4 gallons. This well was observed to cycle at a rate of 4 cycles per minute on 3-11-2010 and was still cycling at this rate on 4-19-2010 when the monthly inspection took place. This rate was used to calculate the volume from 3-11-2010 through 4-19-2010. A new cycle counter was installed on 4-19-2010 and was functioning as it should when I departed the site. The initial reading was 923,086.

\*\*\*\*\* Unable to locate well in February and March due to extreme snowfall.

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 1-15-10  
 Date of Last Reading: 12-11-09  
 Days Since Last Reading: 35  
 Technician: B. Leach

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,467,400	3,309,976	157,424	0.08	359.83
W-15	1139.91	45.11	603,154			0.15	
W-18	1140.87	52.63	426,855	417,115	9,740	0.15	41.74
W-19	1138.04	56.89	603,154	600,540	2,614	0.15	11.20

Additional Comments/Remarks: Moved pump from W-19 to W-15 due to limited water volume in W-19

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 2-18-10  
 Date of Last Reading: 1-15-10  
 Days Since Last Reading: 34  
 Technician: A. Lambie + B. Totech

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,467,718	3,467,400	318	0.08	0.75
W-15	1139.91	45.11	055,674	003,154	12,520	0.15	55.34
W-18	1140.87	52.63	436,119	426,855	9,264	0.15	39.7
W-19	1138.04	56.89	Flowed to	6-15 on	1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 3-11-10  
 Date of Last Reading: 3-18-10  
 Days Since Last Reading: 21  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,679,033	3,447,718	211,315	0.08	805.0
W-15	1139.91	45.11	33,582	15,674	17,908	0.15	127.9
W-18	1140.87	52.63	447,691	426,855	20,836	0.15	148.8
W-19	1138.04	56.89	Revised Reading	0-15	1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUII SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 4-19-10  
 Date of Last Reading: 3-11-10  
 Days Since Last Reading: 39  
 Technician: G. Leebie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,692,457	3,679,033	13,424	0.08	27.5
W-15	1139.91	45.11	66,352	33,582	32,770	0.15	126.0
W-18	1140.87	52.63	469,017	447,691	21,326	0.15	126.0
W-19	1138.04	56.89		Lower pump to 12-16 on 4-15-10		0.15	126.0

Additional Comments/Remarks:

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 5-18-10  
 Date of Last Reading: 4-19-10  
 Days Since Last Reading: 29  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,692,798	3,692,457	341	0.08	0.9
W-15	1139.91	45.11	86,049	66,352	19,697	0.15	101.9
W-18	1140.87	52.63	482,805	469,017	13,788	0.15	71.3
W-19	1138.04	56.89	Moved Pump to W-15 on 1-15-10			0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 6-23-10  
 Date of Last Reading: 5-18-10  
 Days Since Last Reading: 35  
 Technician: B. Lambie

Well ID	Well Elevation (fams)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)	
W-1	1096.68	50.24	3,227,104	3,692,798	39,306	0.08	78.4	
W-15	1139.91	45.11	110,754	86,049	24,705	0.15	105.9	
W-18	1140.87	52.63	503,818	482,805	21,013	0.15	90.1	
W-19	1138.04	56.89	Moved Pump to W-15 on 1-15-10					—

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 7-27-10  
 Date of Last Reading: 6-23-10  
 Days Since Last Reading: \_\_\_\_\_  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,822,005	3,727,104	94,901	0.08	223.3
W-15	1139.91	45.11	128,885	110,254	18,131	0.15	80.0
W-18	1140.87	52.63	514,127	503,818	10,309	0.15	45.5
W-19	1138.04	56.89	Moved pump to W-15 on 1-15-10			0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 8-24-10  
 Date of Last Reading: 7-22-10  
 Days Since Last Reading: 28  
 Technician: A. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,826,353	3,822,005	4,348	0.08	12.4
W-15	1139.91	45.11	141,907	128,885	13,022	0.15	69.8
W-18	1140.87	52.63	515,564	514,127	1,437	0.15	7.7
W-19	1138.04	56.89	Moved pump to W-15 on 1-15-10.			0.15	

Additional Comments/Remarks: The air compressor that supplies air to the leachate pumps was not running when I arrived on site at 7:00 AM

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 9-29-10  
 Date of Last Reading: 8-24-10  
 Days Since Last Reading: 36  
 Technician: B. Loubie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,868,237	3,826,353	41,884	0.08	93.08
W-15	1139.91	45.11	159,003	141,907	17,096	0.15	71.23
W-18	1140.87	52.63	537,592	515,564	22,028	0.15	91.78
W-19	1138.04	56.89	Moved pump to W-15 on 1-15-10			0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 10-21-10  
 Date of Last Reading: 9-29-10  
 Days Since Last Reading: 22  
 Technician: A. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,868,305	3,868,237	68	0.08	0.25
W-15	1139.91	45.11	171,558	159,003	12,555	0.15	85.60
W-18	1140.87	52.63	556,559	537,592	18,967	0.15	129.32
W-19	1138.04	56.89	Checked pump to 63-15 ga	63-15 ga	1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION  
WESTERN DISPOSAL AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 11-23-10  
 Date of Last Reading: 10-21-10  
 Days Since Last Reading: 33  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	3,507,025	3,868,305	38,720	0.08	93.9
W-15	1139.91	45.11	183,418	171,558	11,860	0.15	53.9
W-18	1140.87	52.63	562,184	556,559	5,625	0.15	25.6
W-19	1138.04	56.89	Moved pump to 12-15-10		1-15-10	0.15	

Additional Comments/Remarks:

---



---



---

**KELLY RUN SANITATION**  
**WESTERN DISPOSAL AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 12-16-10  
 Date of Last Reading: 11-23-10  
 Days Since Last Reading: 23  
 Technician: A. Lambie

Well ID	Well Elevation (fams!)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
W-1	1096.68	50.24	4,590,545	3,868,305	722,240	0.08	2512.14
W-15	1139.91	45.11	194,862	183,418	11,445	0.15	74.64
W-18	1140.87	52.63	582,575	556,559	26,016	0.15	169.67
W-19	1138.04	56.89	None pump to	0-15	1-15-10	0.15	---

Additional Comments/Remarks:

---



---



---

APPENDIX B  
WESTERN DISPOSAL AREA  
PULSE COUNTER READINGS  
KELLY RUN SANITATION  
FORWARD TOWNSHIP, PENNSYLVANIA

WELL	START VALUE	CONVERSION	1ST QTR. READ	1ST QTR. PROD.	2ND QTR. READ	2ND QTR. PROD.	3RD QTR. READ	3RD QTR. PROD.	4TH QTR. READ	4TH QTR. PROD.	YEAR TO DATE PRODUCTION	DATE	DAYS PASSED
W-1	3,309,976	0.08	3,679,033	29524.56	3,727,104	3845.68	3,868,237	11290.64	4,590,545	57784.64	102445.52	12/16/2010	365
W-15	3,154	0.15	33,582	4564.2	110,754	11575.8	199,003	7237.35	194,863	5379	28756.35	12/16/2010	365
W-18	417,115	0.15	447,691	4586.4	503,818	8419.05	537,592	5066.1	582,575	6747.45	24819.00	12/16/2010	365
W-19	540	0.15	3,154	392.1	0	0	0	0	0	0	392.10	12/16/2010	365

1ST QTR. PROD. 39067.26 2ND QTR. PROD 23840.53 3RD QTR. PROD 23594.09 4TH QTR. PROD 69911.09 156412.97

\* Installed pump in W-19 on 12-11-09. Initial counter reading 000,540.

\*\* Moved pump from W-19 to W-15 on 1-15-2010. Initial counter reading 003,154.





**KELLY RUN SANITATION**  
**OLD WASTE AREA**  
**LEACHATE EXTRACTION WELLS**  
**PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 3-11-10  
 Date of Last Reading: 2-18-10  
 Days Since Last Reading: 21  
 Technician: B. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	6,546,617	6,314,378	232,239	0.65	7,188.41
OW-2	1104.85	42	1,095,632	1,085,632	* * *	0.65	~1,872
OW-3	1108.22	45	3,306,919	2,848,813	458,106	<del>0.65</del> 0.14	3,490.3
OW-5	1106.61	52	1,169,117	1,165,121	3,996	0.65	123.7
OW-7	1128.22	27	* *	* *	* *	0.08	* *

Additional Comments/Remarks: OW-2 cycle counter still not working. Pump is still observed to be cycling at a rate of 2 cycles per minute on average. (More than 2 cycles per minute was observed.)  
 OW-2 production calculation: 2 cycles per minute  
 30,240 mins. in 21 days  
 $2 \times 30,240 = 60,480$  cycles  
 $60,480 \text{ cycles} \div 21 \text{ days} = 2,880 \text{ cycles/day}$   
 $2,880 \text{ cycles} \times 0.65 \text{ gallons per cycle} = \sim 1,872 \text{ GPD}$

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 4-19-10  
 Date of Last Reading: 3-11-10  
 Days Since Last Reading: 39  
 Technician: G. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	6,797,551	6,546,617	250,934	0.65	4,182.2
OW-2	1104.85	42	* 923,050	N/A	N/A	0.65	* 3,744
OW-3	1108.22	45	4,105,433	3,306,919	798,714	0.16	3,276.8
OW-5	1106.61	52	1,170,957	1,169,117	1,840	0.65	30.7
OW-7	1128.22	27	3,179,925	2,207,187 (1-15-10)	972,738	0.08	827.9 (since 1-15-10)

Additional Comments/Remarks: \* Installed new cycle counter on 4-19-10 with an initial counter reading of 923,050.

\*\* Pump was observed cycling at a rate of 4 cycles/min. on 3-11-10. The pump was still cycling at this rate 4 cycles/min. on 4-19-10. This rate was used to calculate the Average Equivalent Yield (Gallons per day) for this time frame.

**KELLY RUN SANITATION  
OLD WASTE AREA  
LEACHATE EXTRACTION WELLS  
PNEUMATIC CYCLE PUMP COUNTER READINGS**

Date: 5-18-10  
 Date of Last Reading: 4-19-10  
 Days Since Last Reading: 29  
 Technician: O. Lambie

Well ID	Well Elevation (famsl)	Well Depth (ft.)	Counter Reading	Previous Counter Reading	Difference	Gallons per Cycle	Average Equivalent Yield (Gallons per Day)
OW-1	1109.23	30	7,062,215	6,797,551	264,664	0.65	5932.1
OW-2	1104.85	42	938,314	923,050	15,264	0.65	342.1
OW-3	1108.22	45	4,893,260	4,105,633	787,627	<del>0.65</del> 0.16	4345.5
OW-5	1106.61	52	1,174,895	1,170,957	3,938	0.65	88.3
OW-7	1128.22	27	3,227,020	3,179,925	47,095	0.08	129.9

Additional Comments/Remarks: Replaced pump at OW-3 due to a cracked teflon guide bar. Replacement pump will produce a higher volume (0.65 gpc/cycle) than the old pump. The damaged pump will be repaired and kept as a spare.















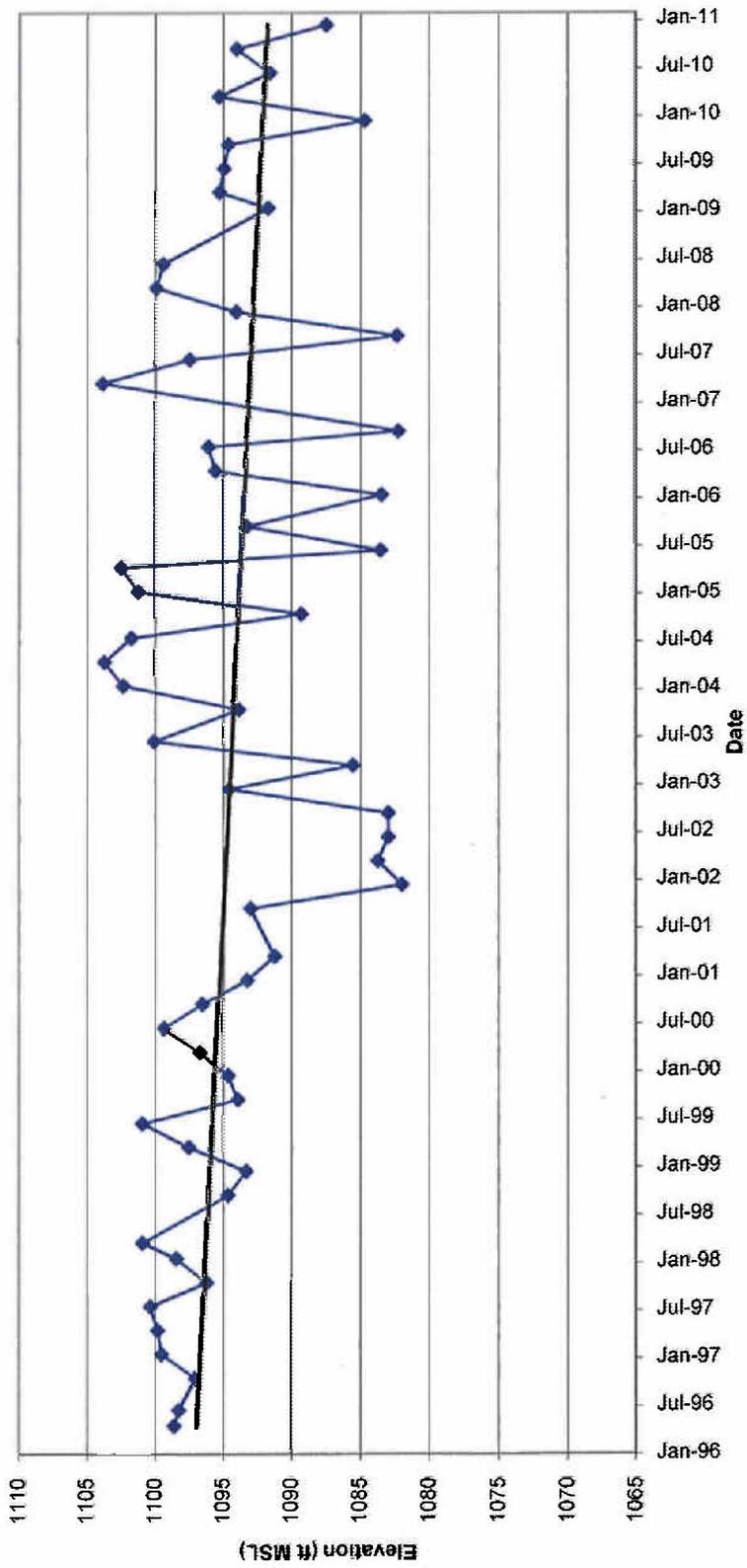
---

**APPENDIX C**

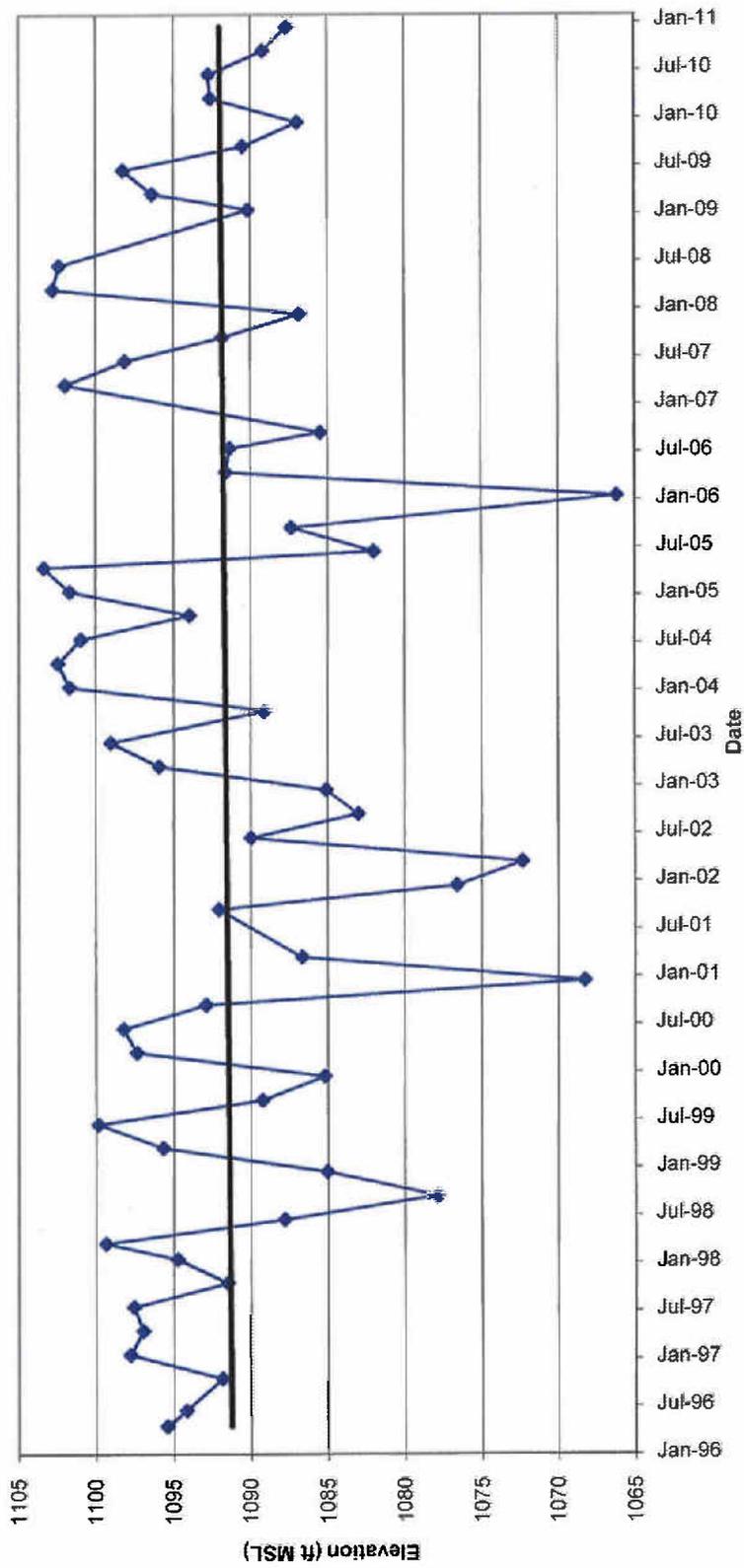
**LEACHATE ELEVATION TREND CHARTS**

---

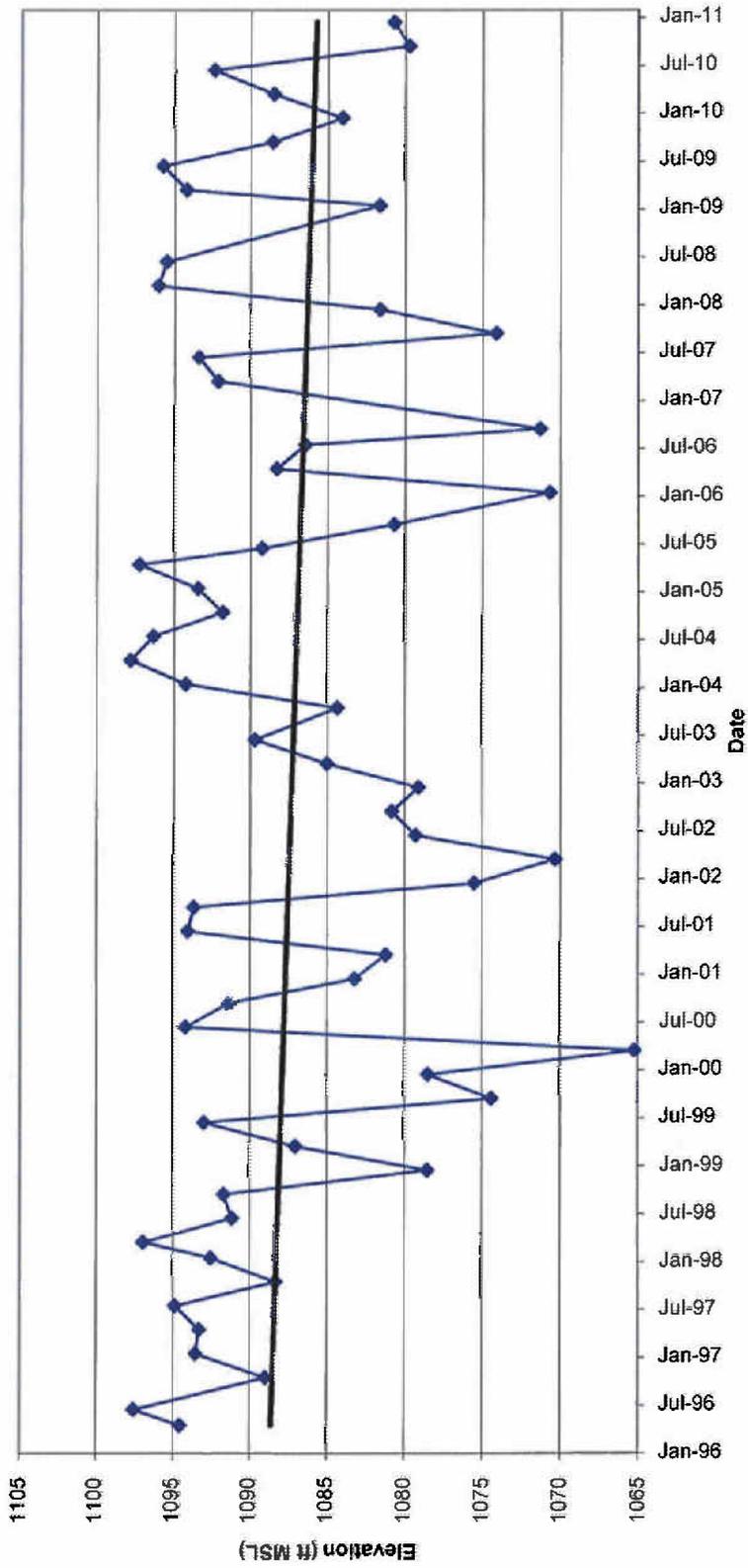
Old Waste Area OW-1 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



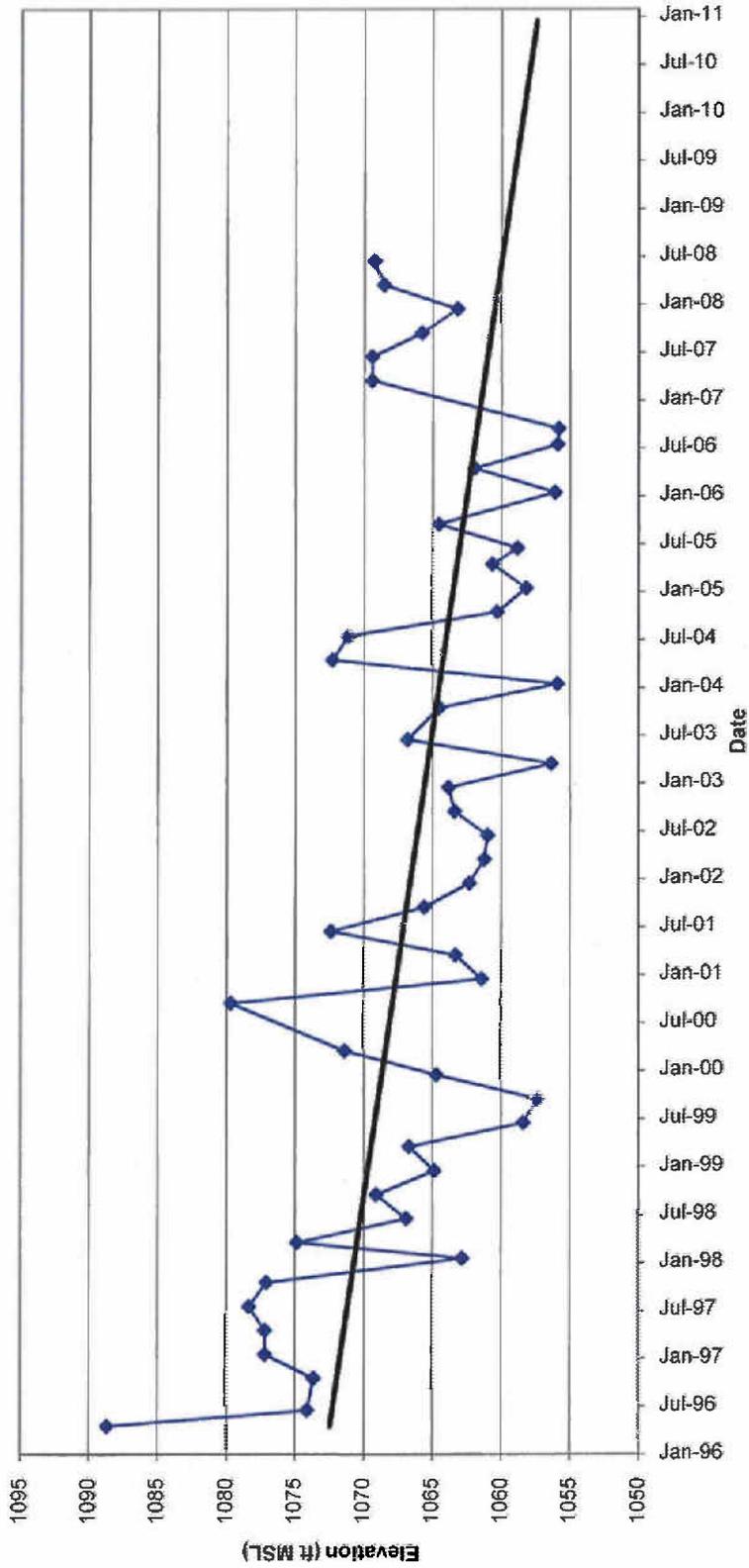
**Old Waste Area OW-2 - Leachate Elevation Trend Data**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



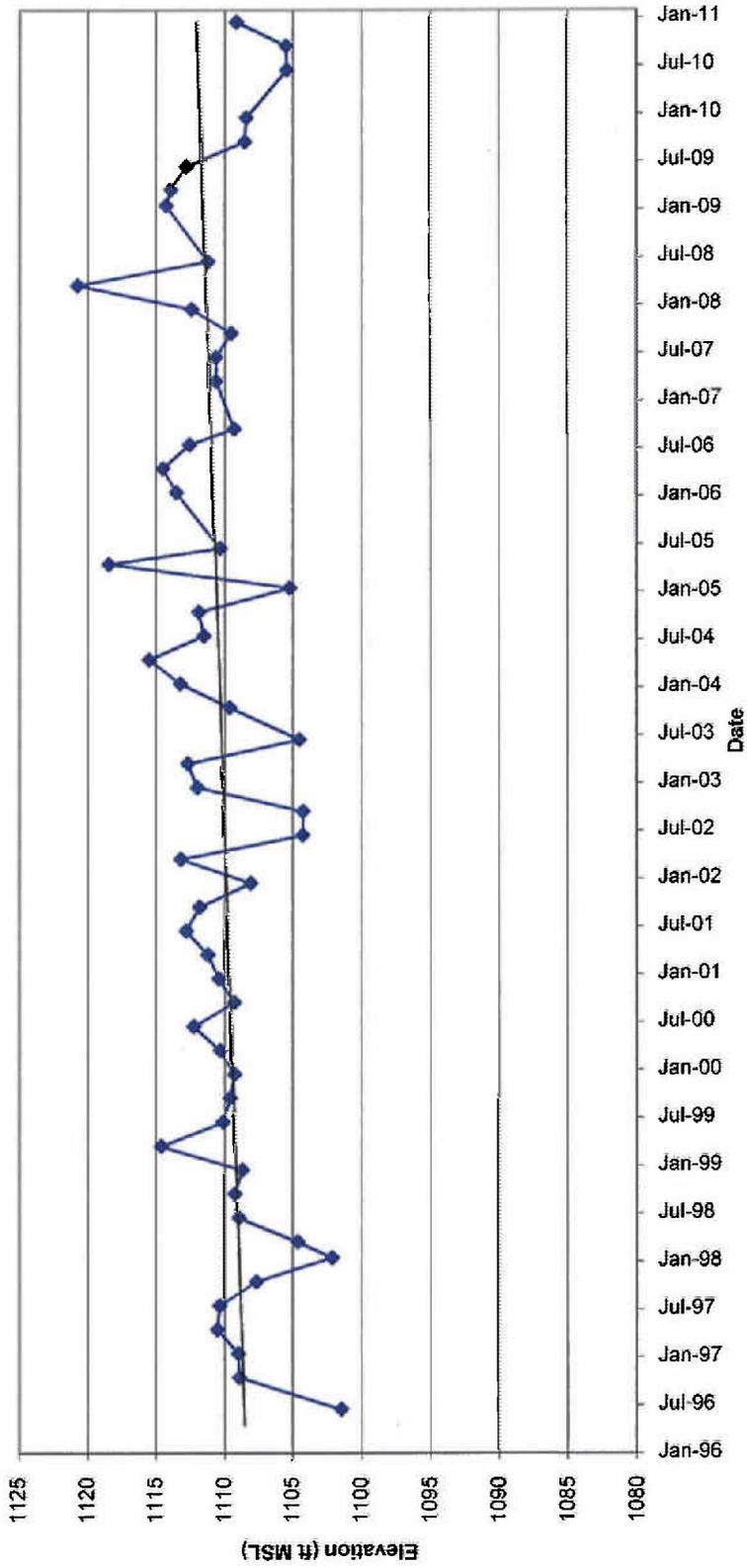
Old Waste Area OW-3 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



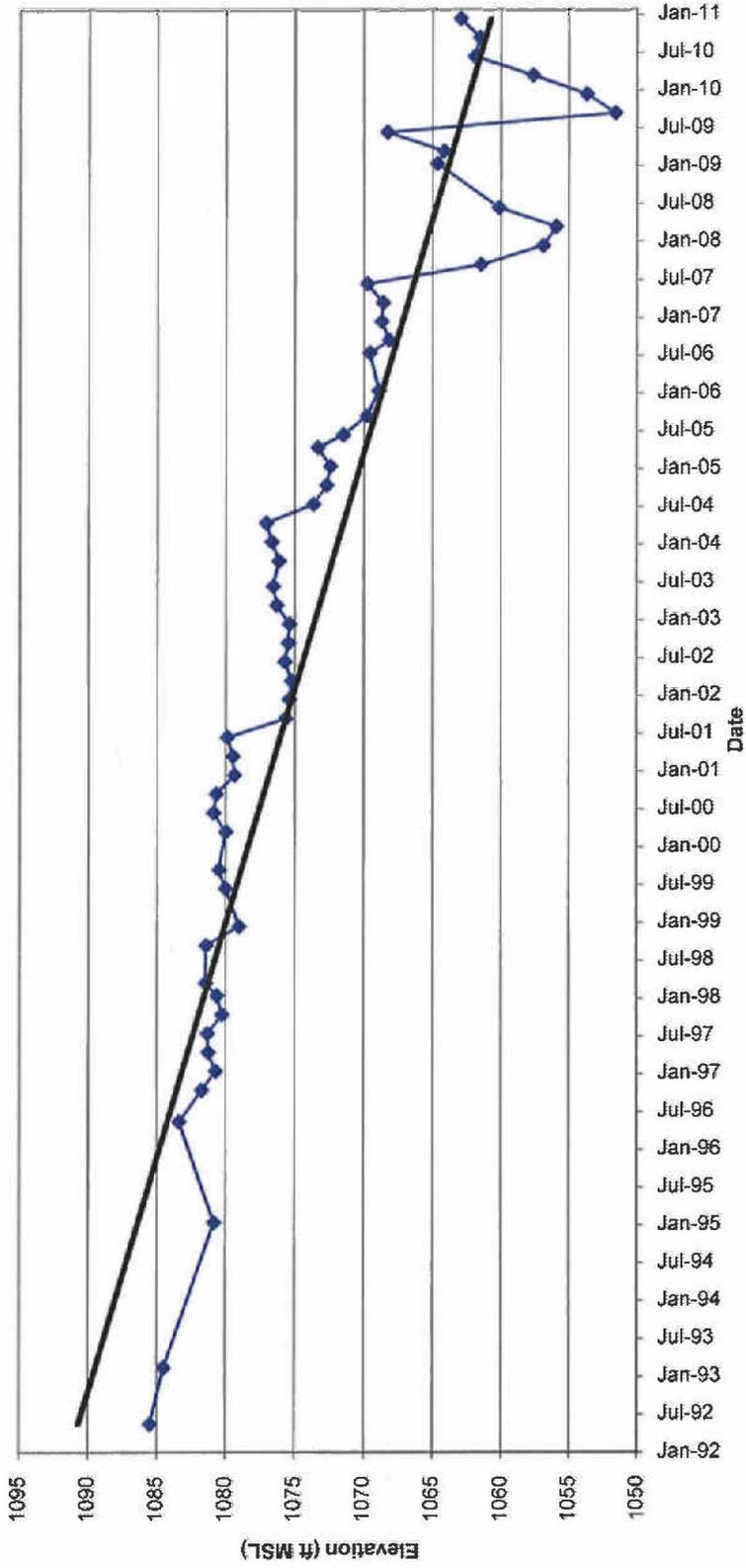
Old Waste Area OW-5 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



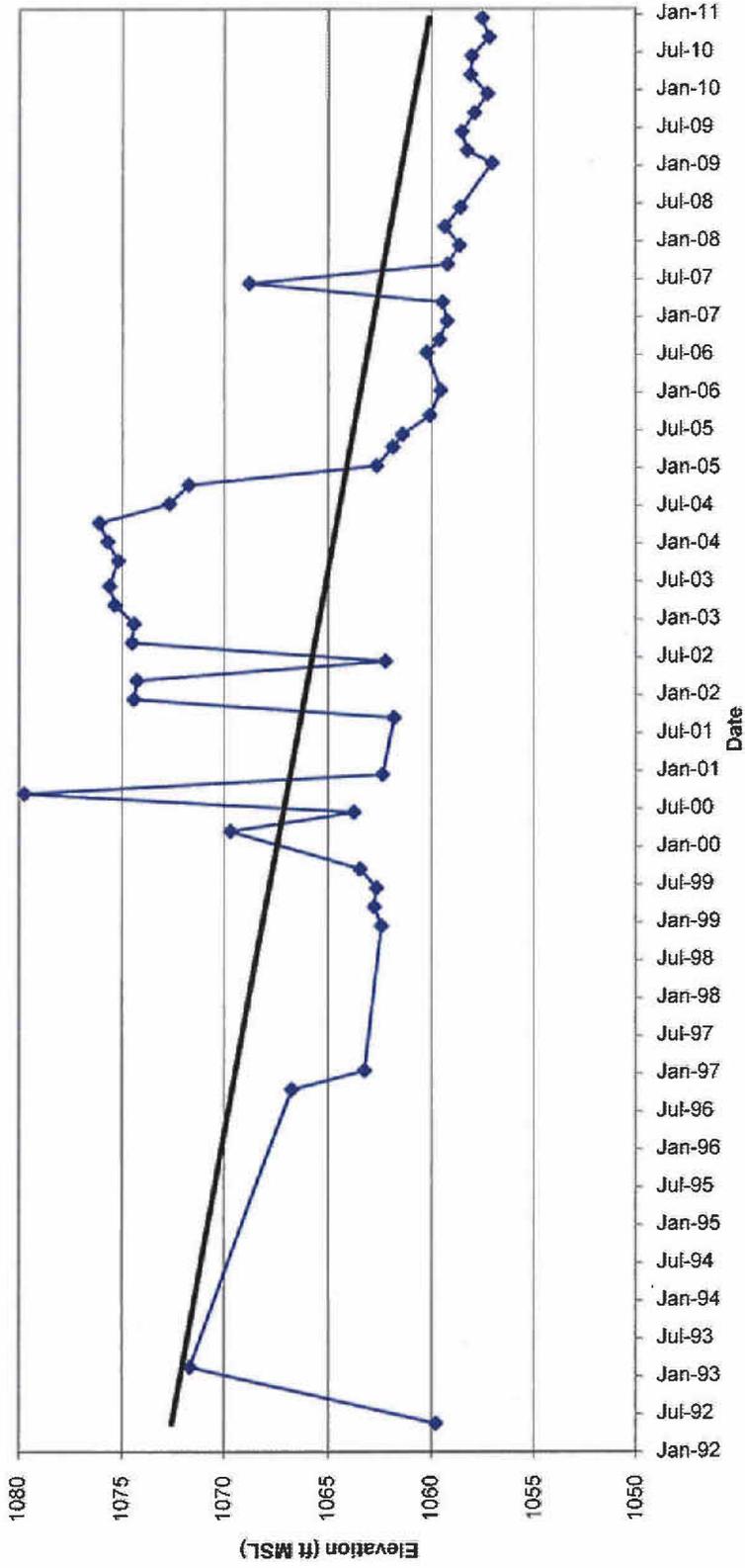
Old Waste Area OW-7 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



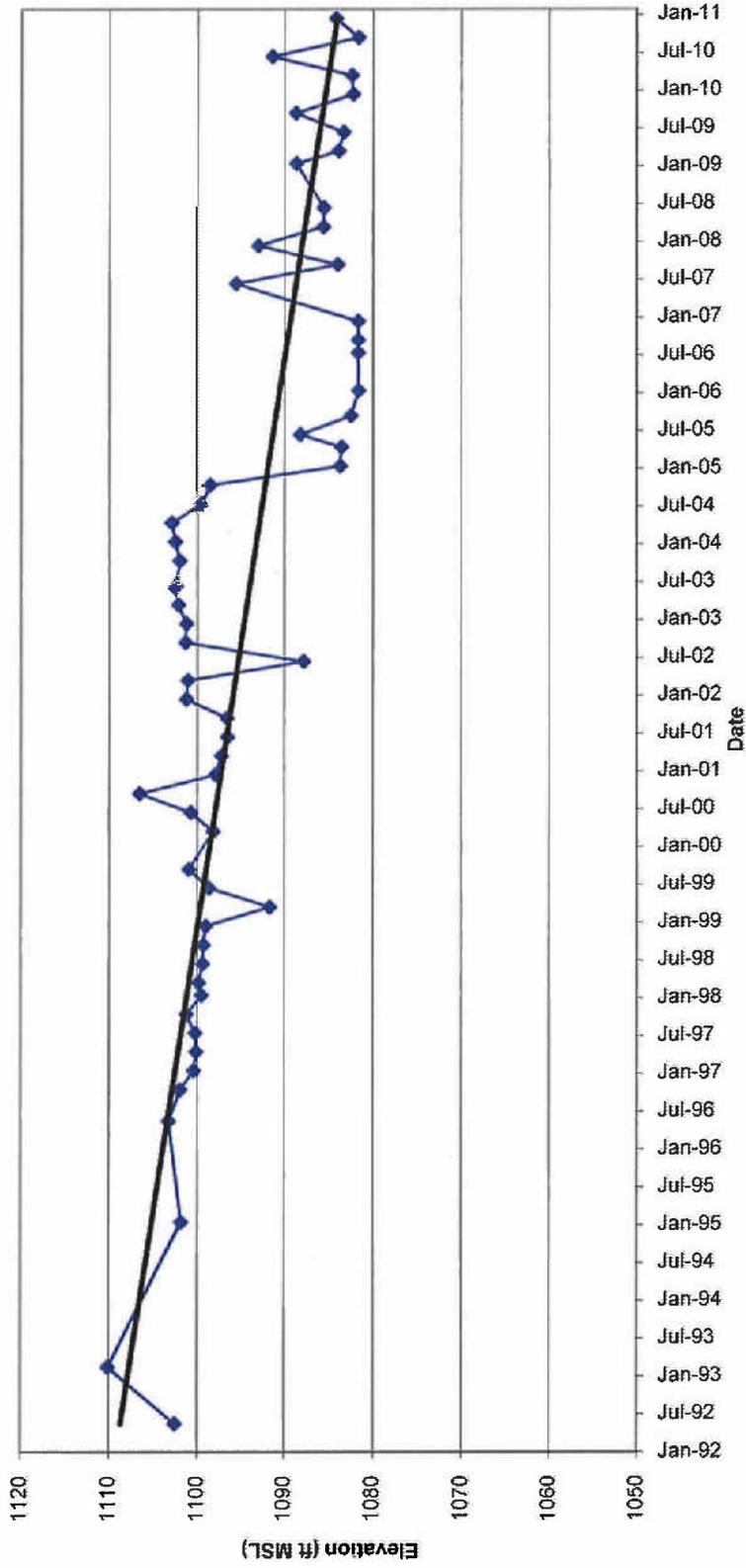
Western Disposal Area W-1 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



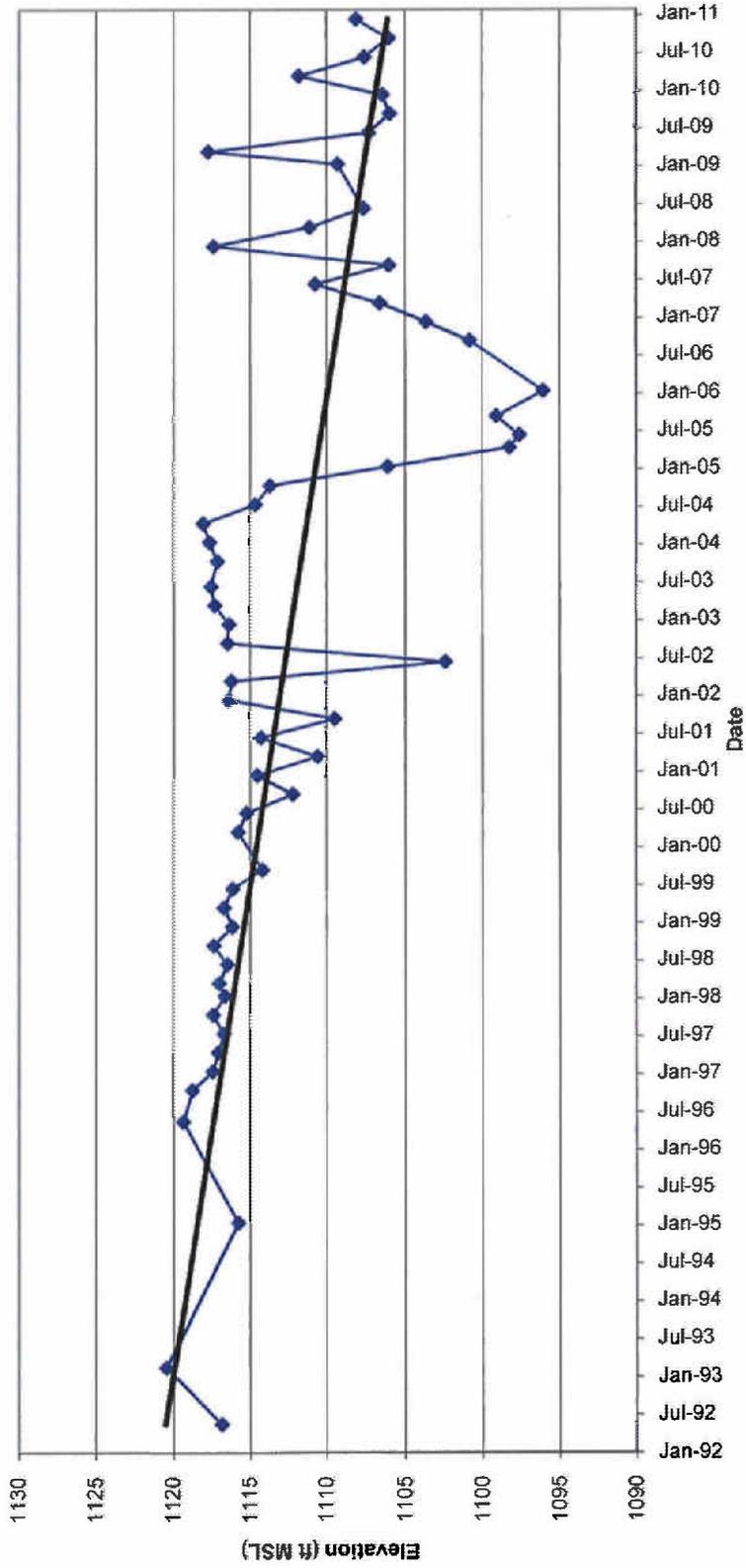
Western Disposal Area W-2 - Leachate Elevation Trend Data  
 Kelly Run Sanitation  
 Forward Township, Pennsylvania  
 Annual Report 2010



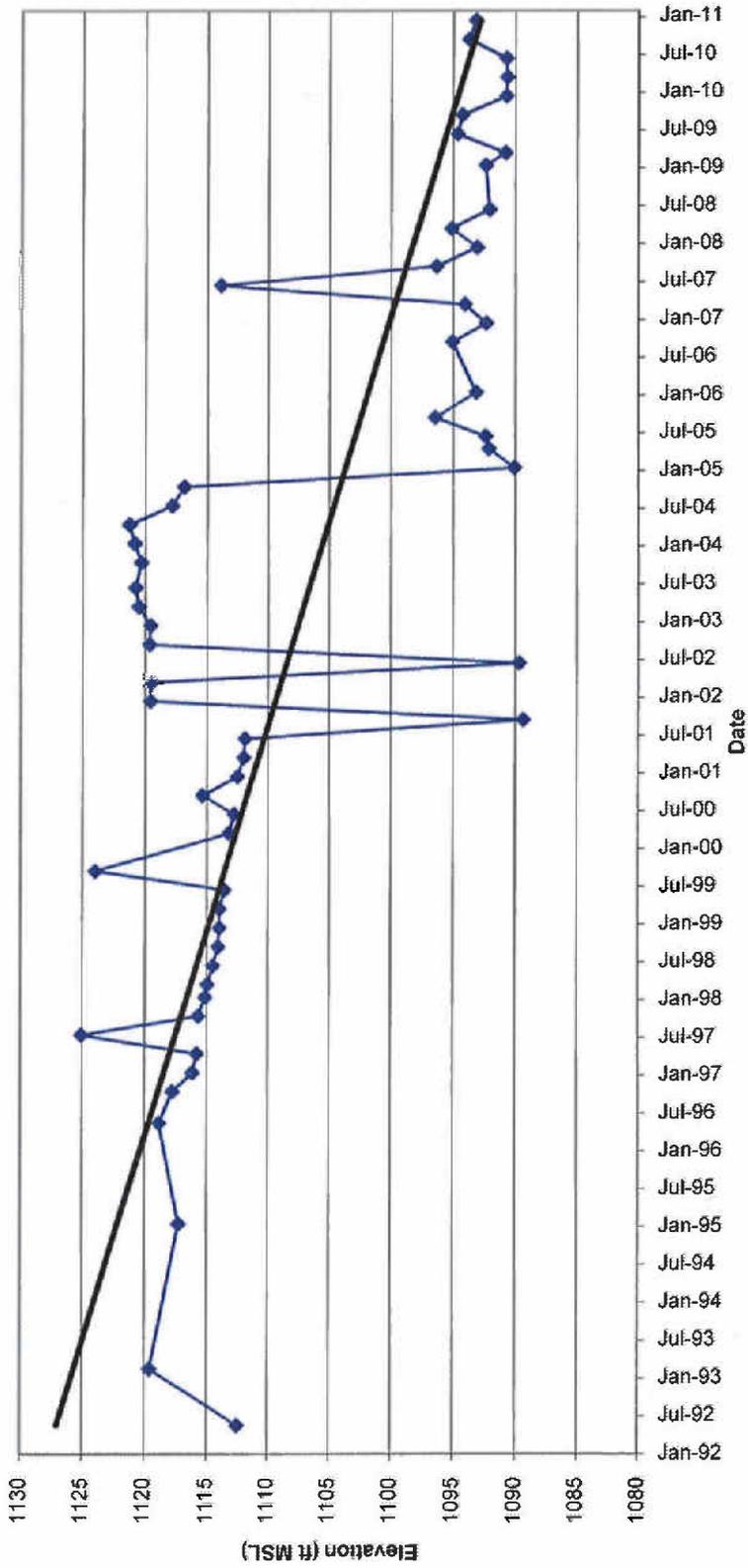
Western Disposal Area W-8 - Leachate Elevation Trend Data  
Kelly Run Sanitation  
Forward Township, Pennsylvania  
Annual Report 2010



**Western Disposal Area W-14 - Leachate Elevation Trend Data**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



**Western Disposal Area W-18 - Leachate Elevation Trend Data**  
**Kelly Run Sanitation**  
**Forward Township, Pennsylvania**  
**Annual Report 2010**



---

**APPENDIX D**

**BENWOOD LIMESTONE (FIGURE 2) AND PITTSBURGH COAL (FIGURE 3)  
POTENTIOMETRIC MAPS (FROM ANNUAL GROUNDWATER  
MONITORING EVENT – REPORT SUBMITTED SEPARATELY)**

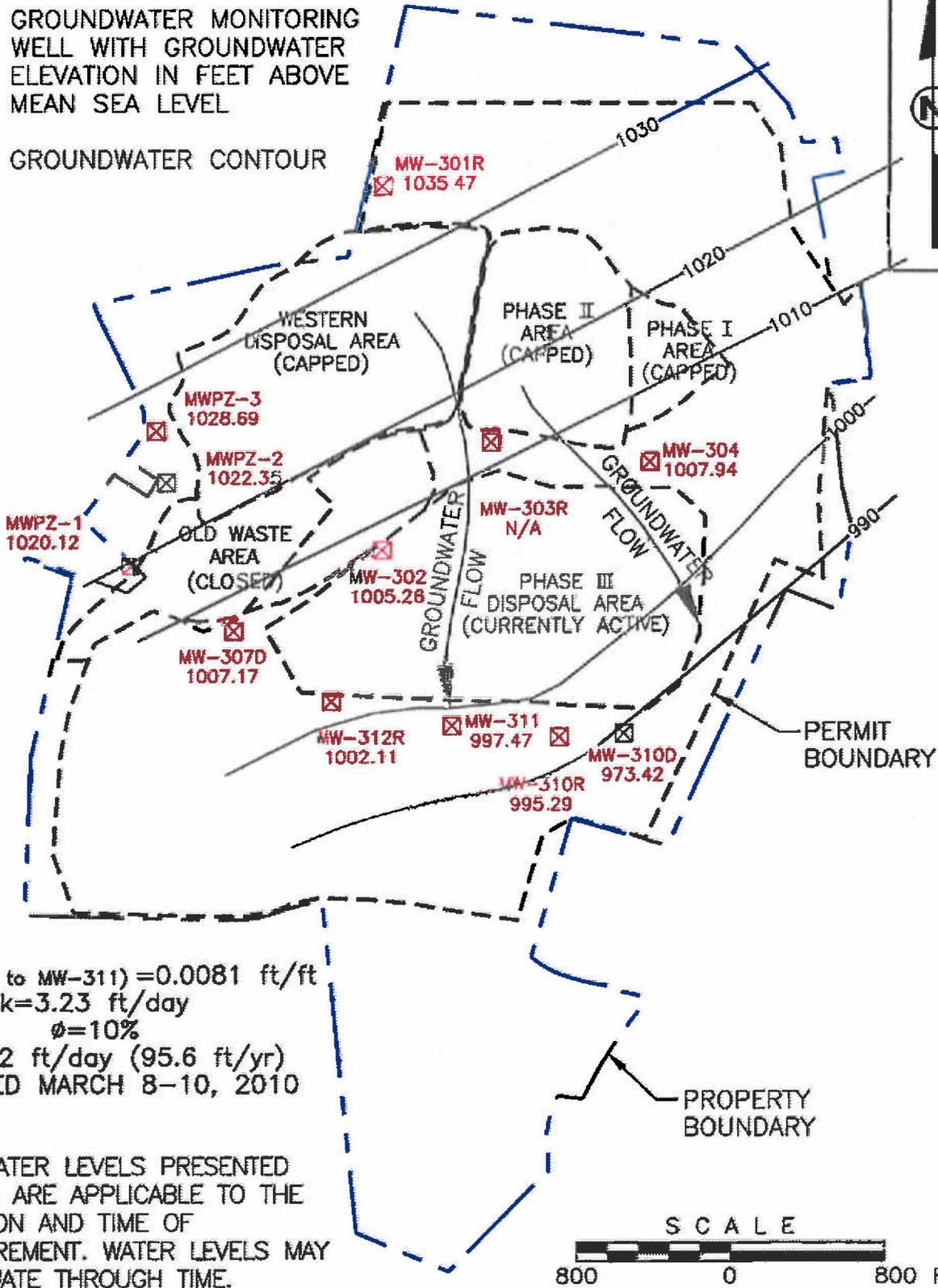
---

**LEGEND**

 **MW-304**  
1007.94

GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL

— 1020 — GROUNDWATER CONTOUR



$i$  (MW-302 to MW-311) = 0.0081 ft/ft  
 $k$  = 3.23 ft/day  
 $\phi$  = 10%  
 $V$  = 0.262 ft/day (95.6 ft/yr)  
 MEASURED MARCH 8-10, 2010

**NOTE:**

1. THE WATER LEVELS PRESENTED HEREIN ARE APPLICABLE TO THE LOCATION AND TIME OF MEASUREMENT. WATER LEVELS MAY FLUCTUATE THROUGH TIME.



**Civil & Environmental Consultants, Inc.**  
 EXPORT, PA PITTSBURGH, PA  
 (724) 327-5200 • (412) 429-2324  
 Cincinnati, OH • Columbus, OH • Indianapolis, IN • Nashville, TN

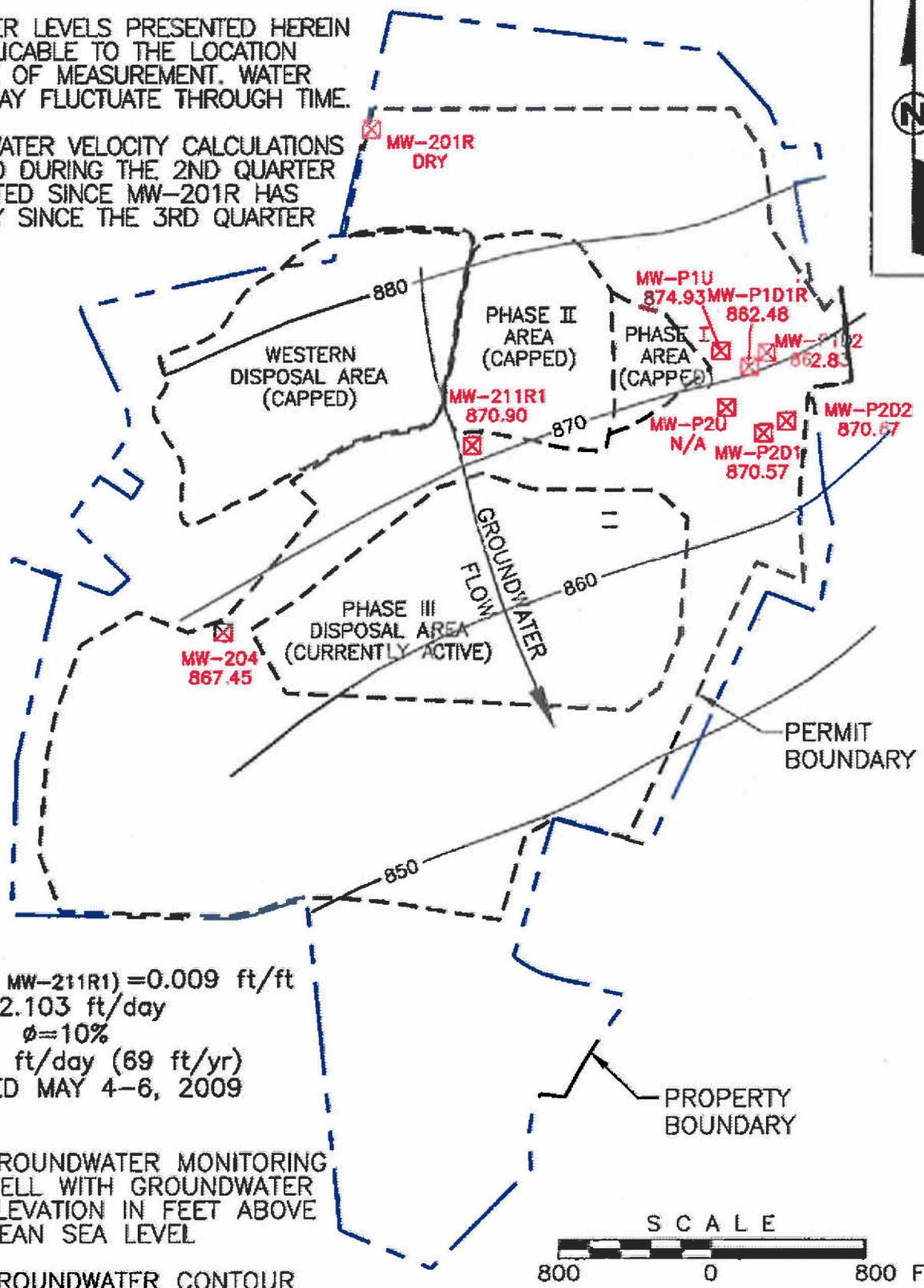
BENWOOD LIMESTONE  
 POTENTIOMETRIC MAP  
 KELLY RUN LANDFILL  
 PERMIT NO. 100663

G:\PROJECTS\1005\050558\DWG\050558A45.DWG (JGILLIGAN) - MAY 24, 2010 - 16:3:36

<b>OWN. BY:</b> JHG	<b>SCALE:</b> AS SHOWN	<b>DATE:</b> 05/04/10	<b>PROJECT NO.:</b> 050-558.0110	<b>FIGURE NO.:</b> 2
<b>CHKD. BY:</b> JHG				

**NOTE:**

1. THE WATER LEVELS PRESENTED HEREIN ARE APPLICABLE TO THE LOCATION AND TIME OF MEASUREMENT. WATER LEVELS MAY FLUCTUATE THROUGH TIME.
2. GROUNDWATER VELOCITY CALCULATIONS MEASURED DURING THE 2ND QUARTER 2009 LISTED SINCE MW-201R HAS BEEN DRY SINCE THE 3RD QUARTER 2009.



$i(MW-201R \text{ to } MW-211R1) = 0.009 \text{ ft/ft}$   
 $k = 2.103 \text{ ft/day}$   
 $\phi = 10\%$   
 $V = 0.189 \text{ ft/day (69 ft/yr)}$   
 MEASURED MAY 4-6, 2009

**LEGEND**

- GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- GROUNDWATER CONTOUR



**Civil & Environmental Consultants, Inc.**  
 EXPORT, PA PITTSBURGH, PA  
 (724) 327-5200 • (412) 429-2324  
 Cincinnati, OH • Columbus, OH • Indianapolis, IN • Nashville, TN

PITTSBURGH COAL  
 POTENTIOMETRIC MAP  
 KELLY RUN LANDFILL  
 PERMIT NO. 100663

<b>DWN BY:</b> JHG	<b>SCALE:</b> AS SHOWN	<b>DATE:</b> 05/04/10	<b>PROJECT NO.:</b> 050-558.0110	<b>FIGURE NO. 3</b>
<b>CHKD BY:</b> JSG				

G:\PROJECTS\050558\DWG\050558A46.DWG (JGILLIGAN) - MAY 24, 2010 - 16:15

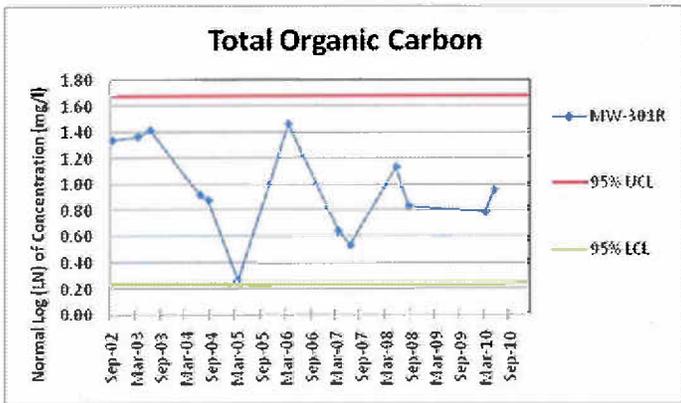
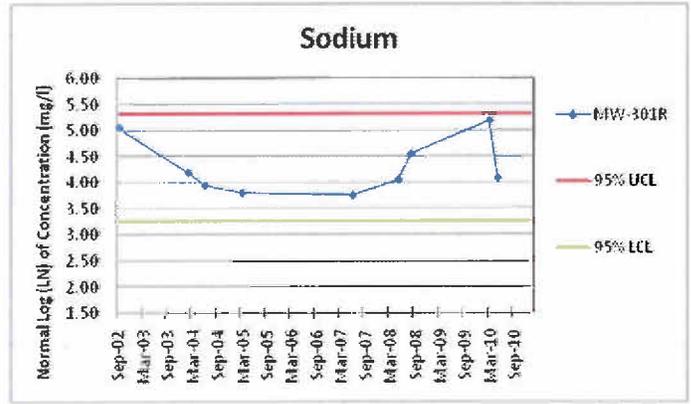
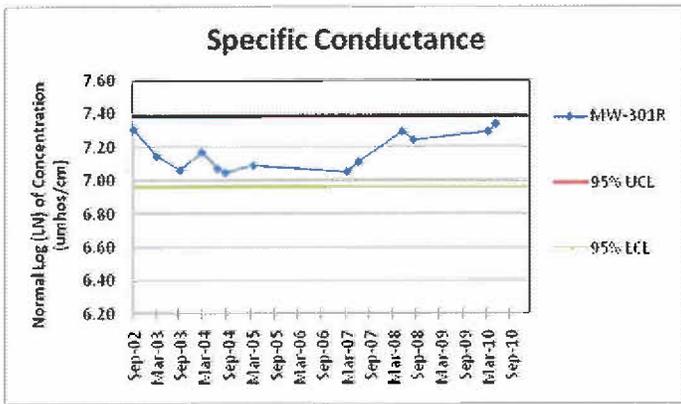
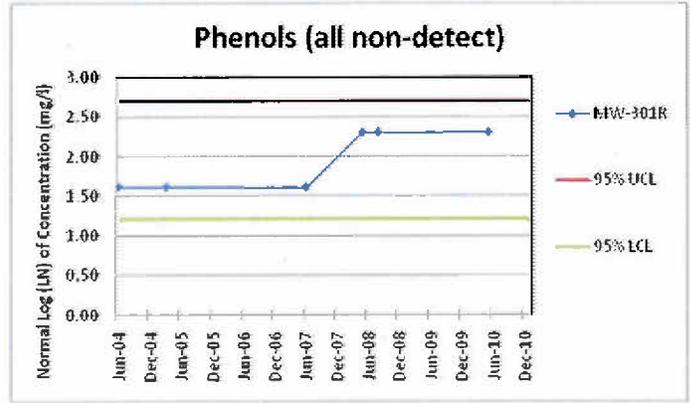
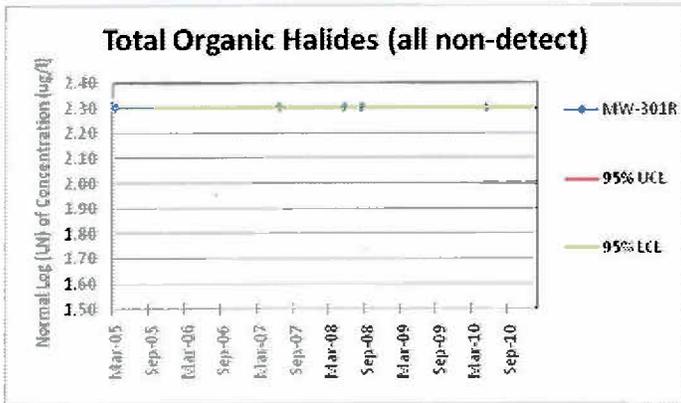
---

**APPENDIX E**

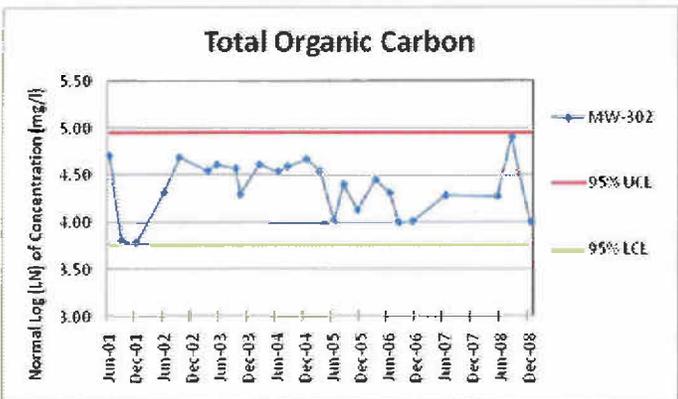
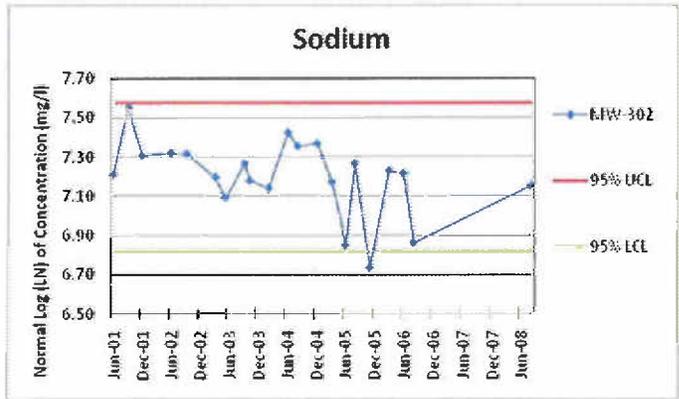
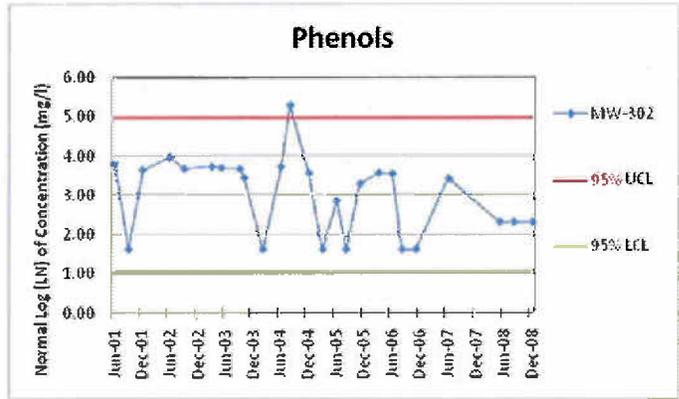
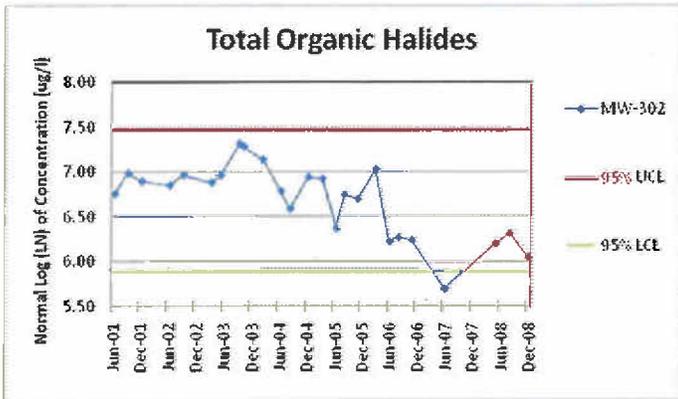
**GROUNDWATER MONITORING WELL CONTROL CHARTS**

---

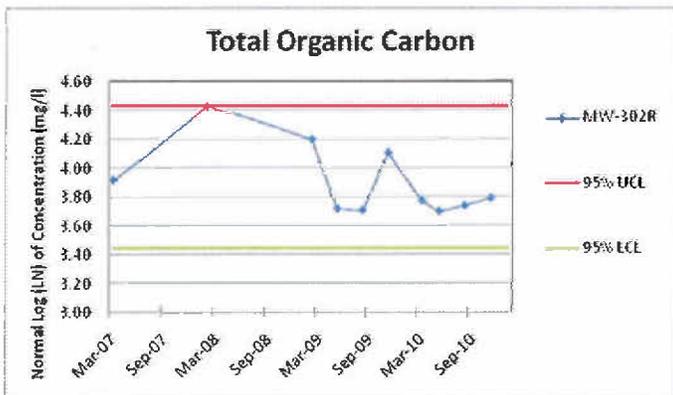
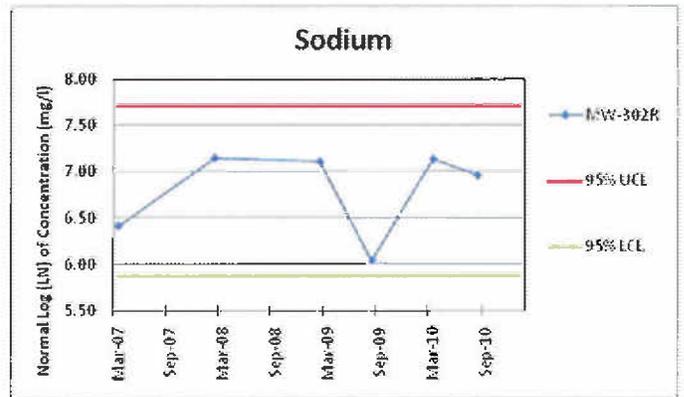
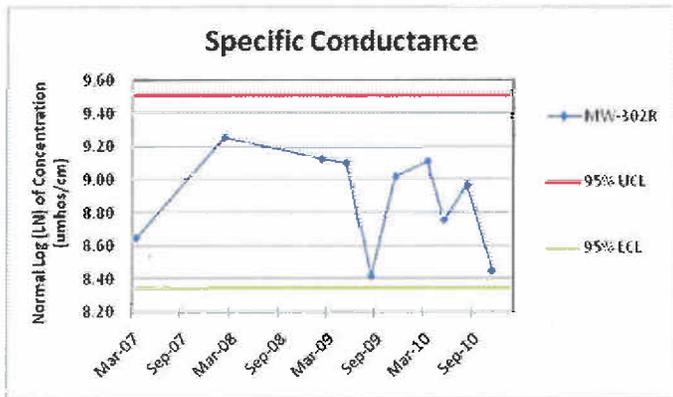
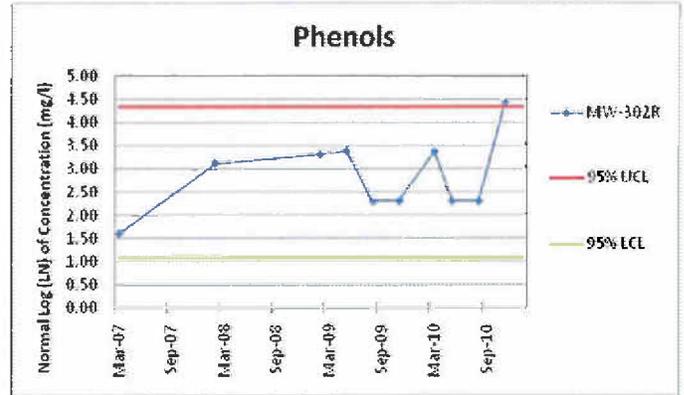
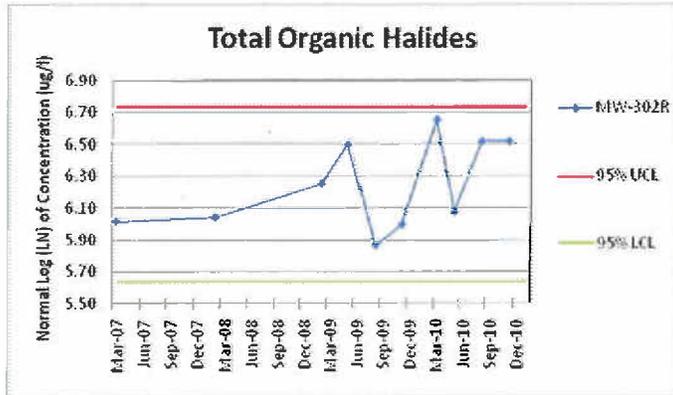
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-301R**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



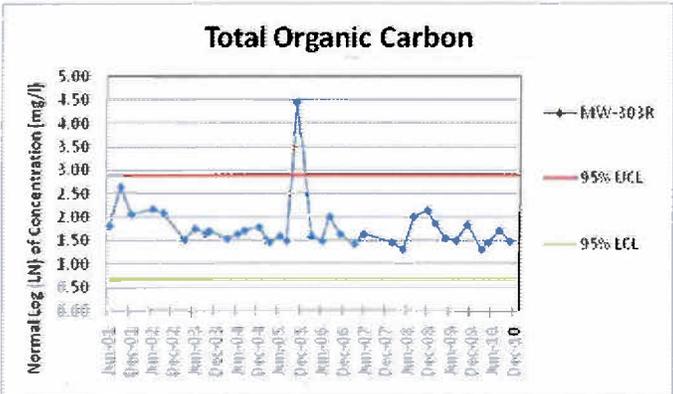
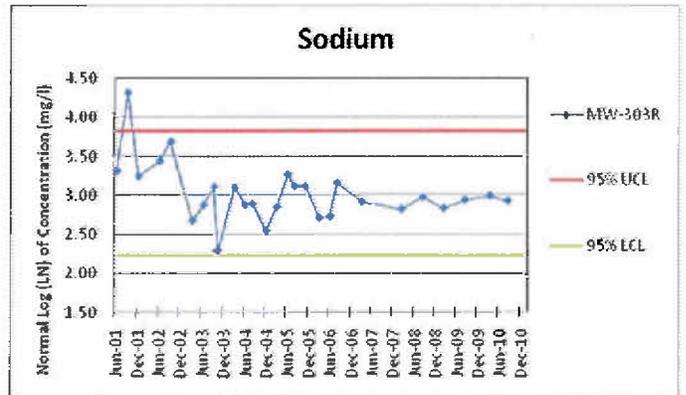
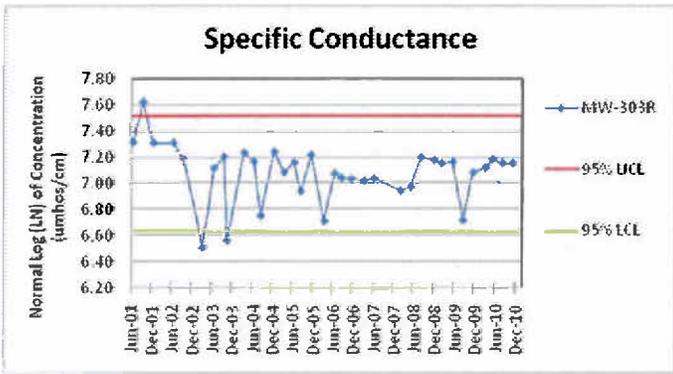
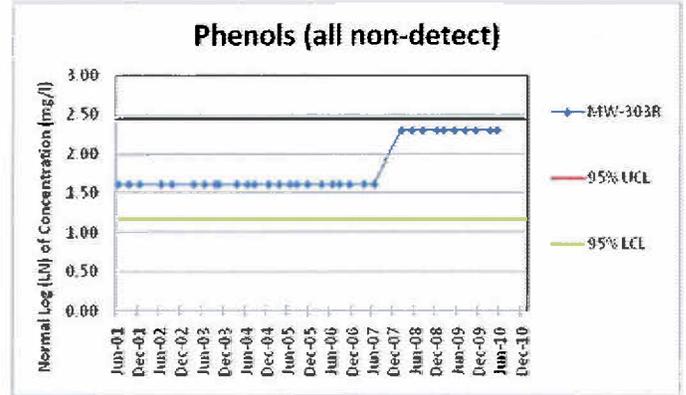
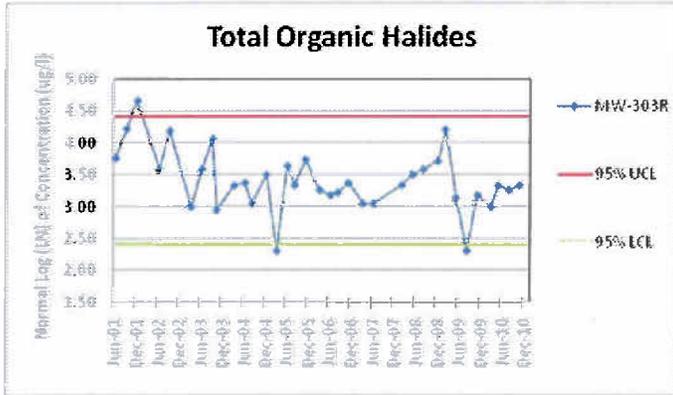
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-302**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



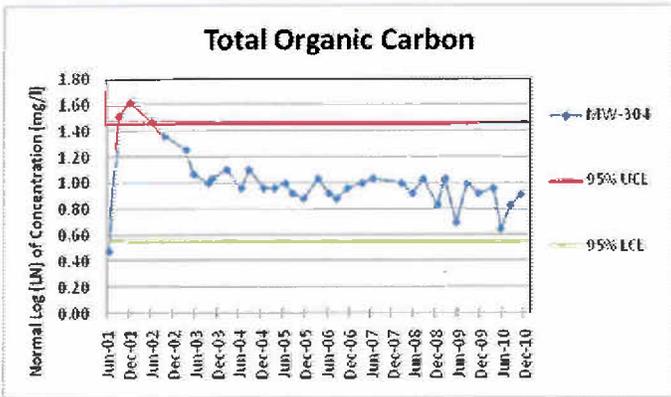
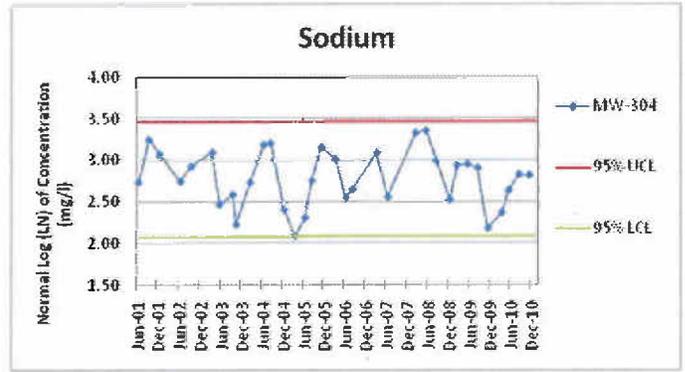
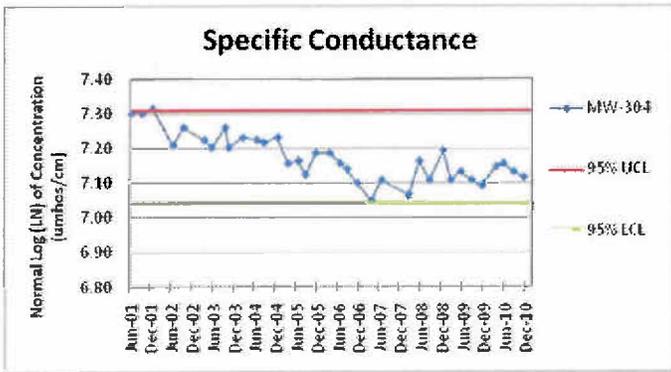
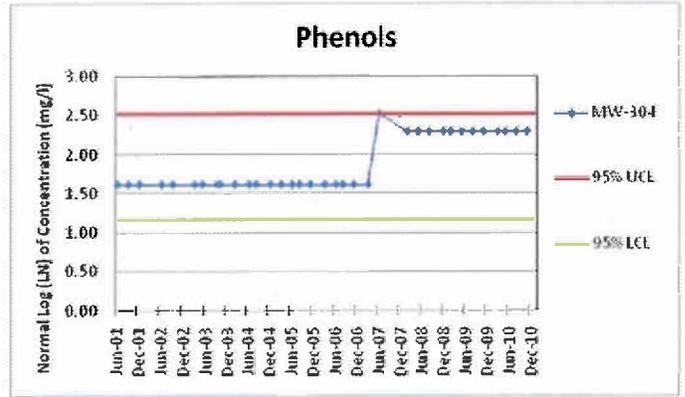
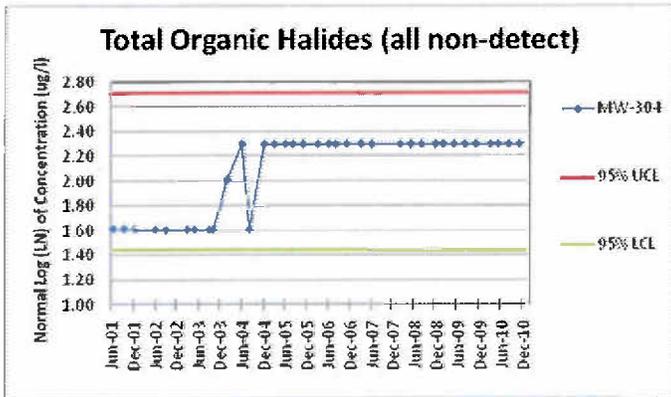
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-302R**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



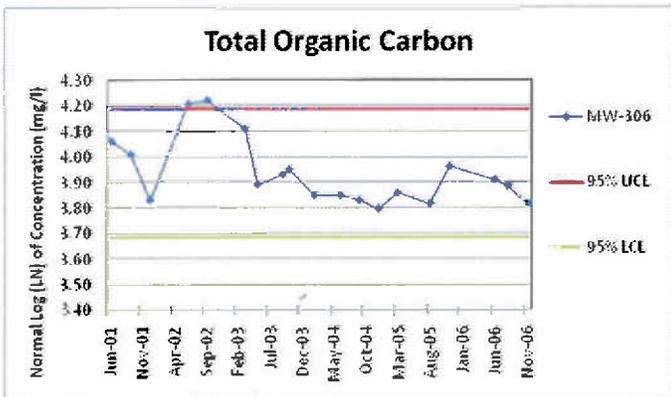
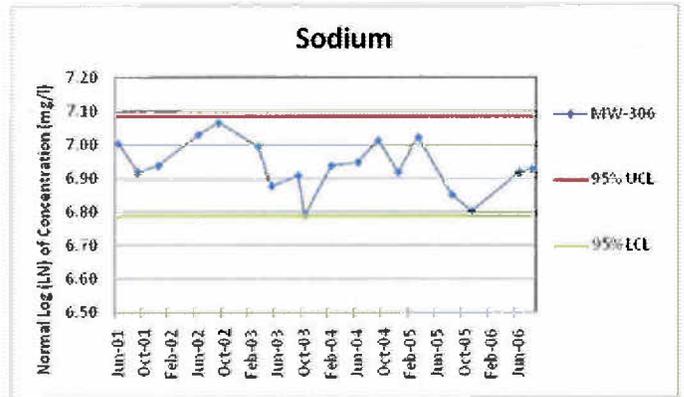
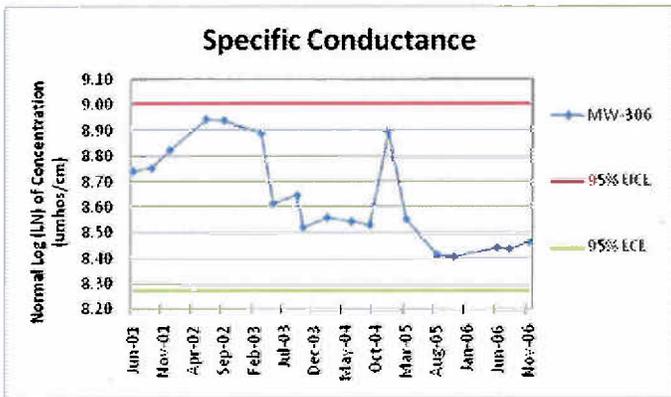
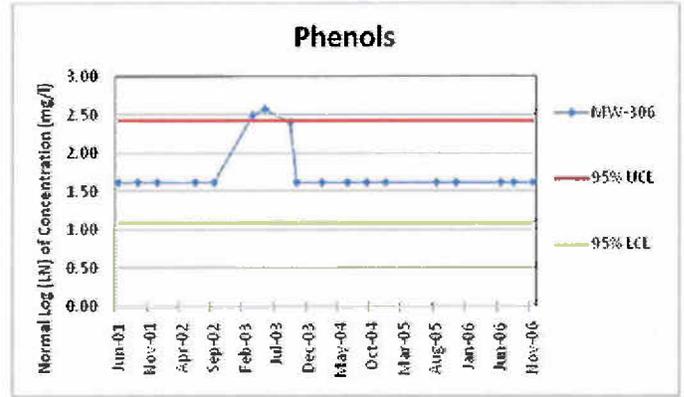
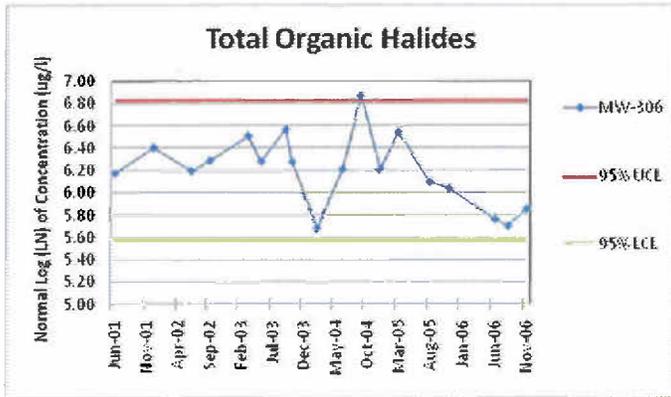
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-303R**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



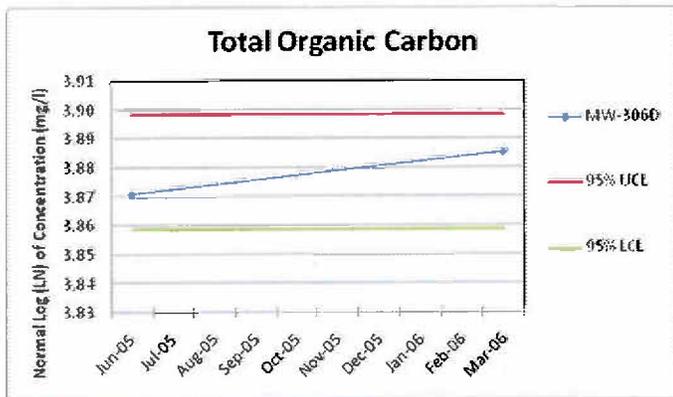
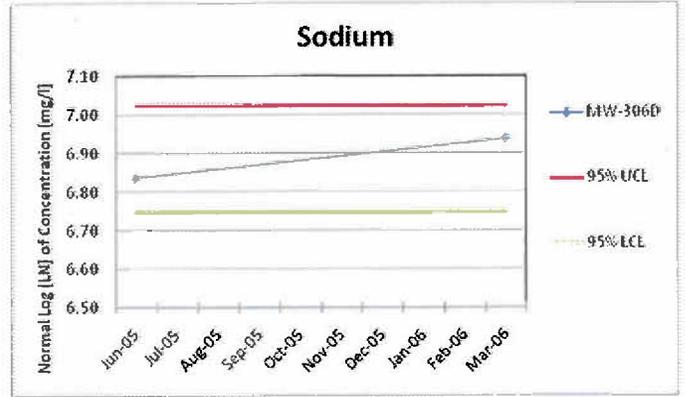
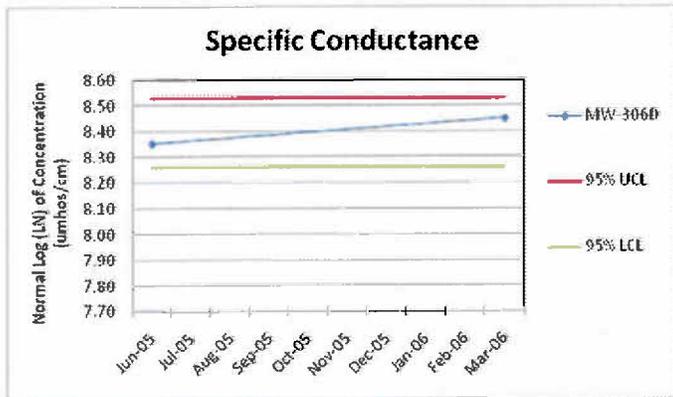
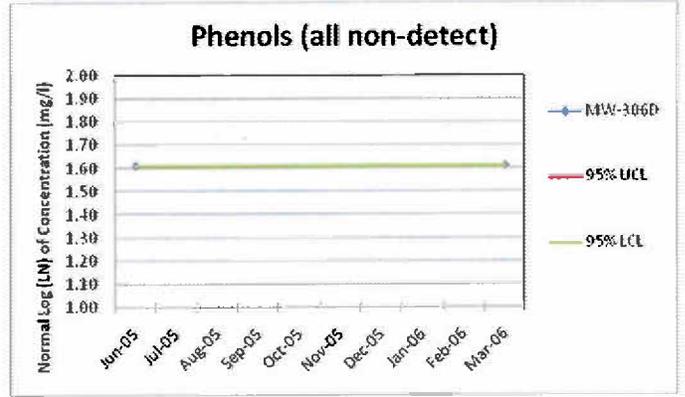
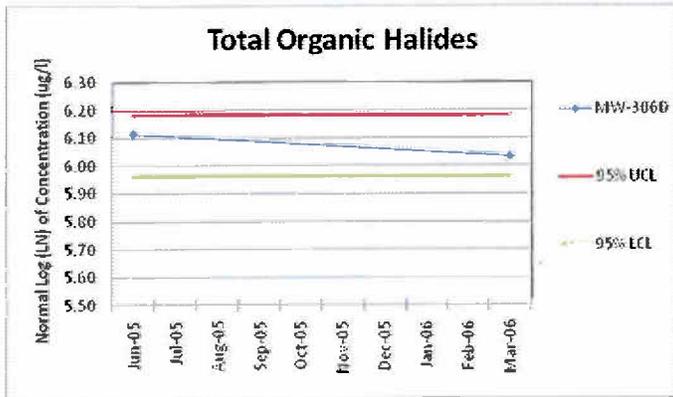
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-304**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



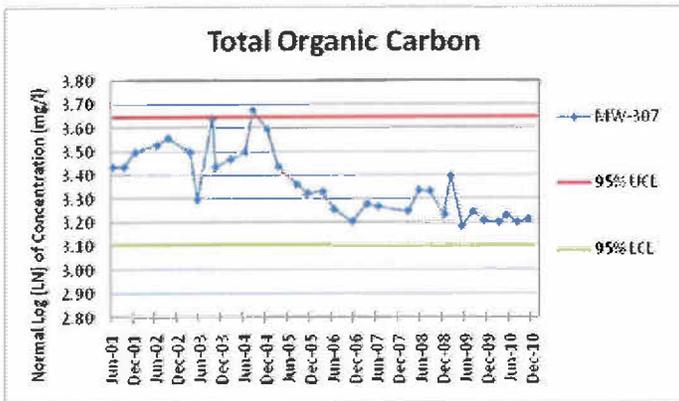
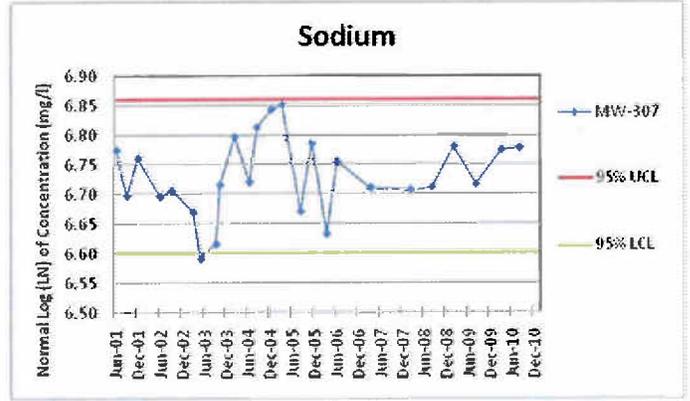
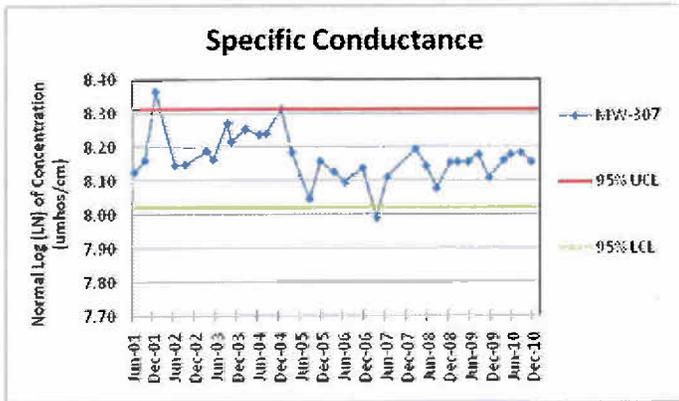
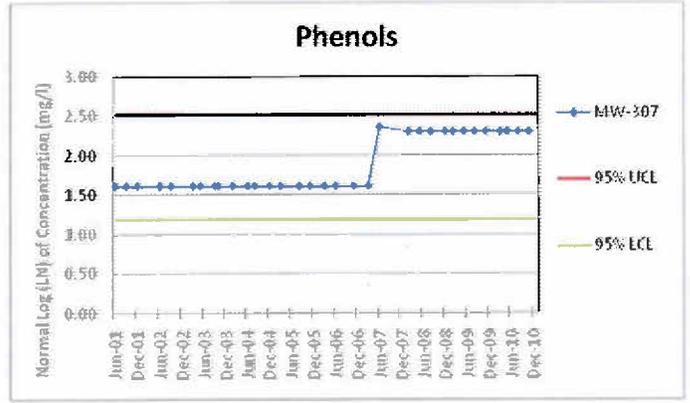
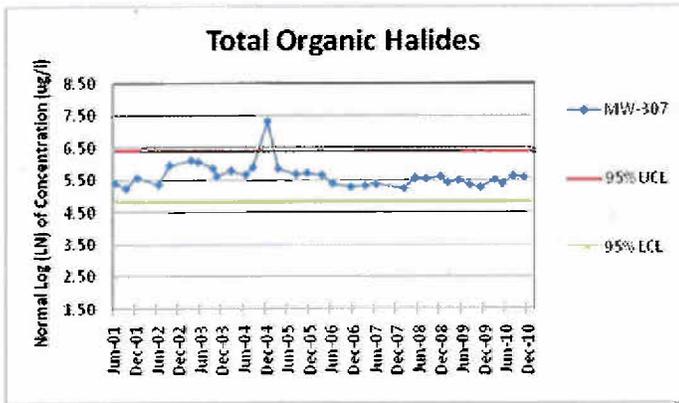
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-306**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



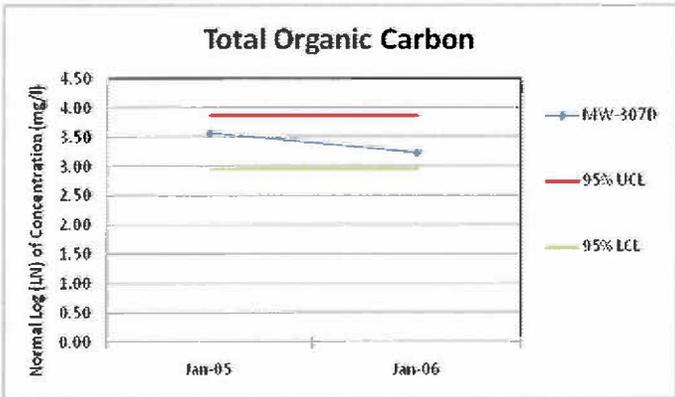
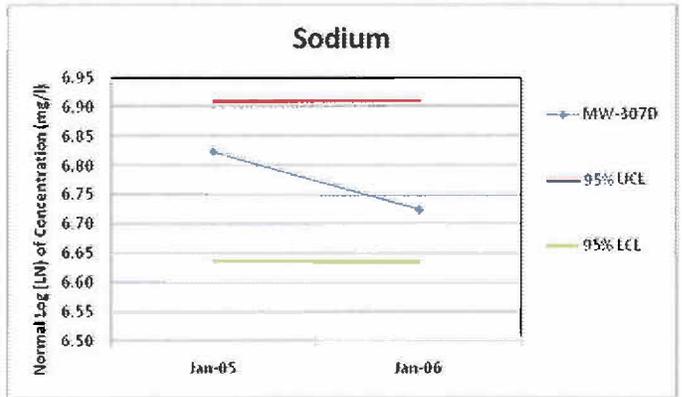
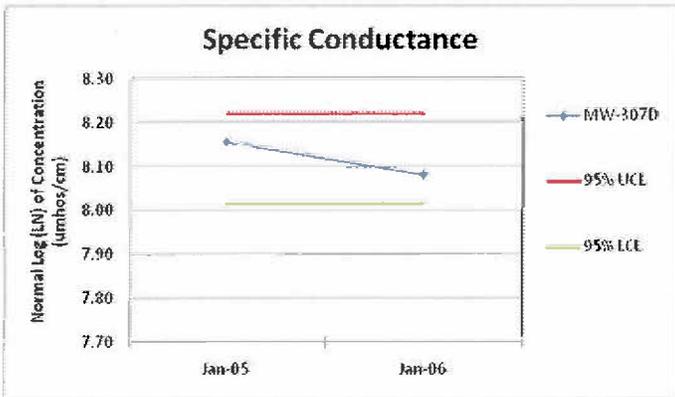
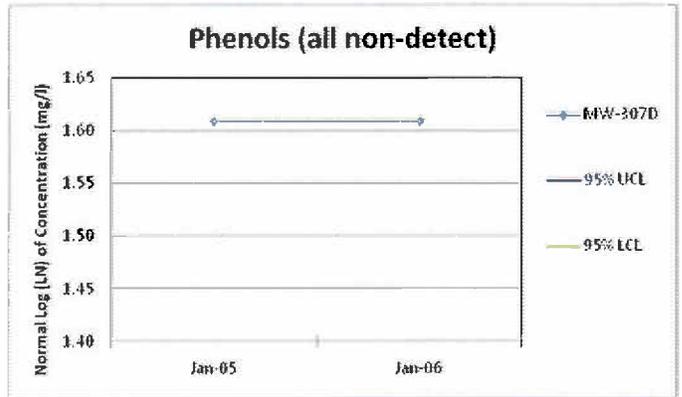
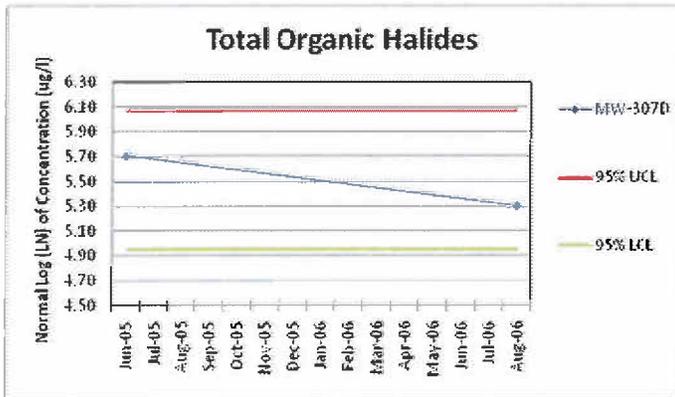
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-306D**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



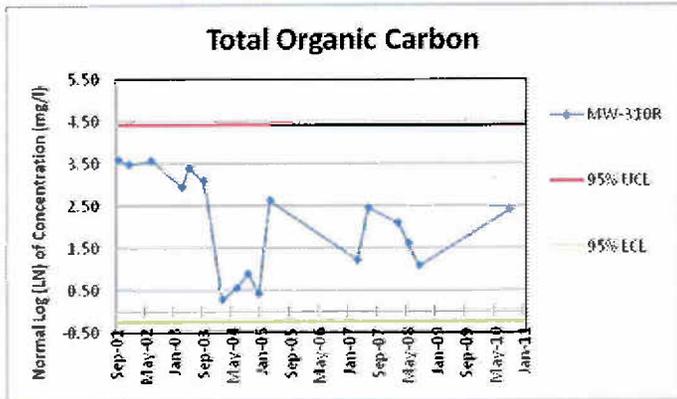
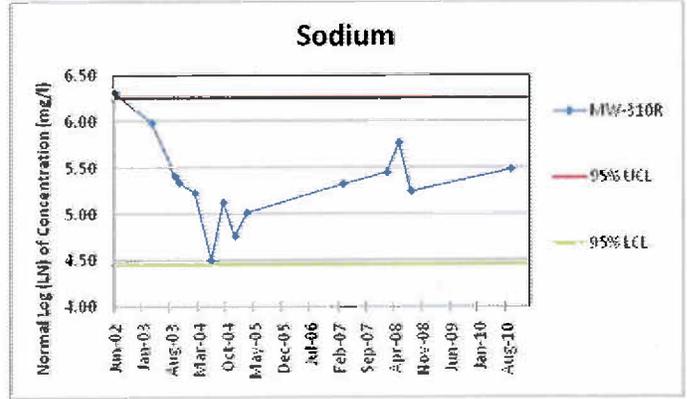
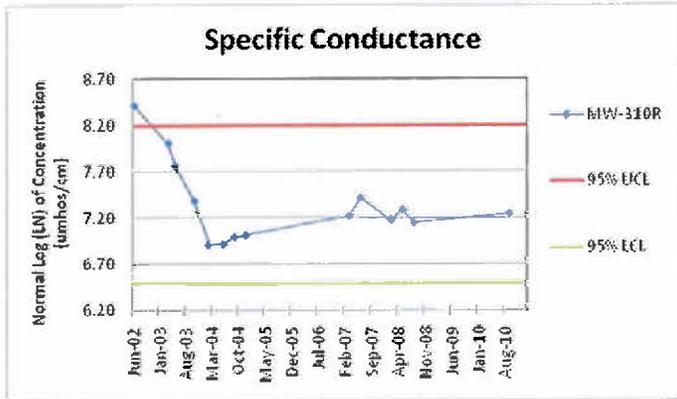
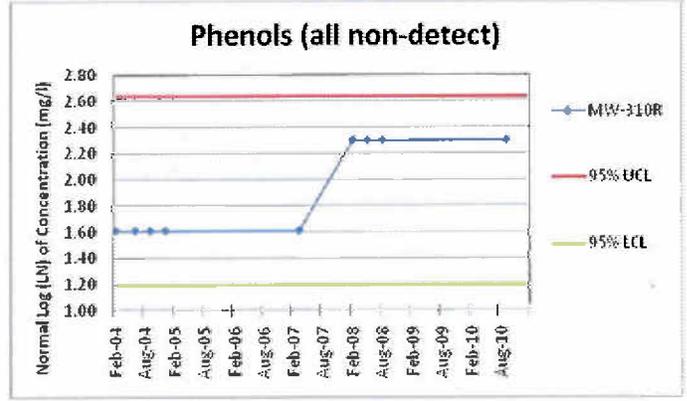
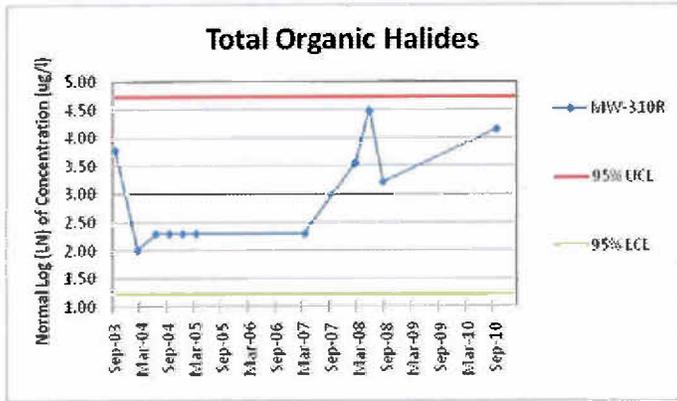
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-307**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



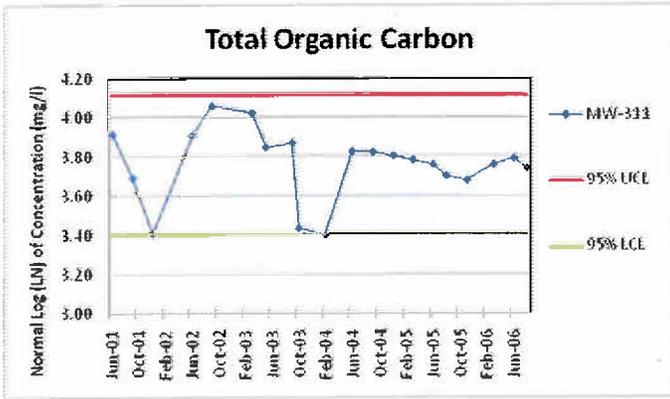
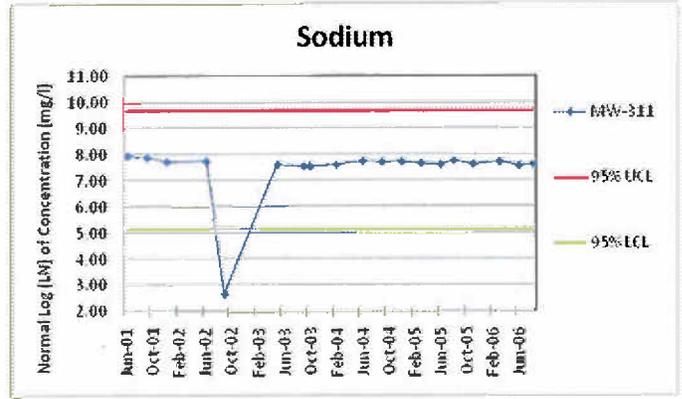
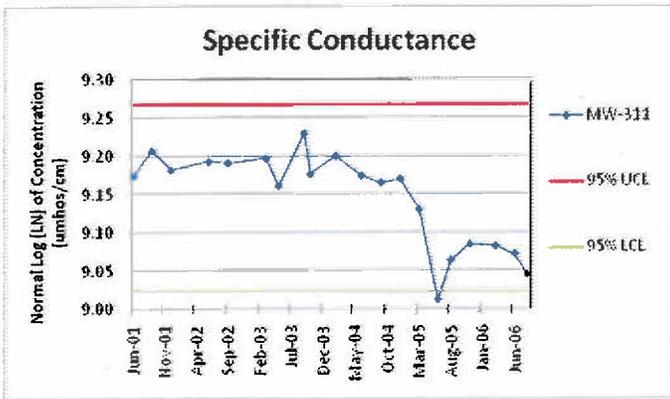
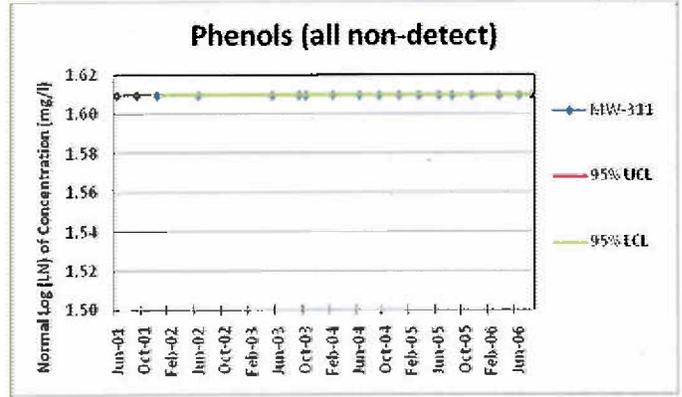
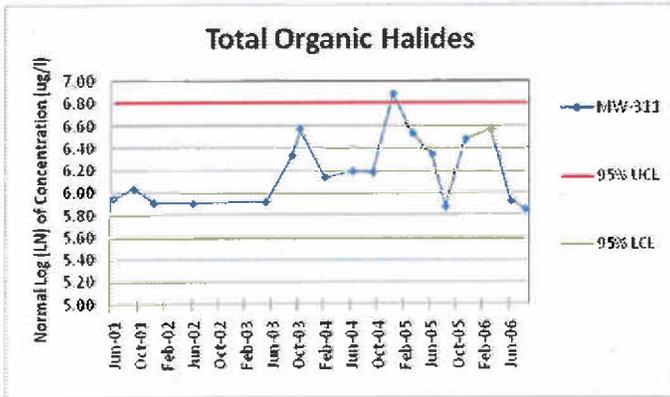
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-307D**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



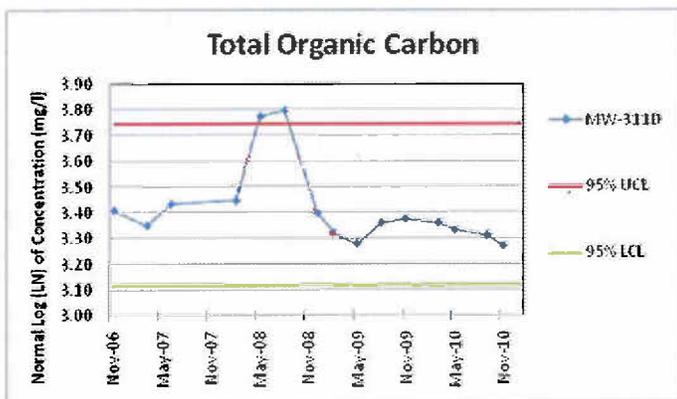
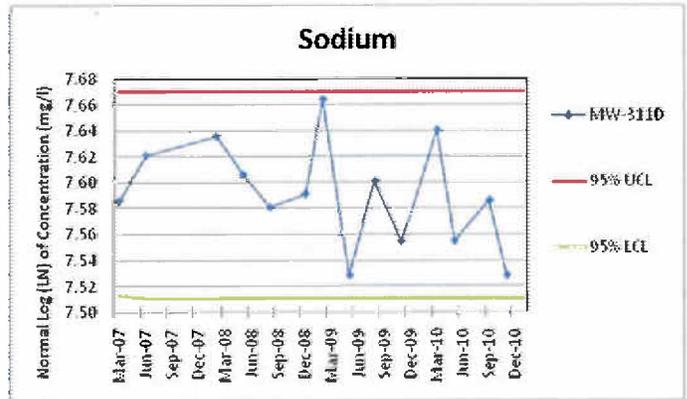
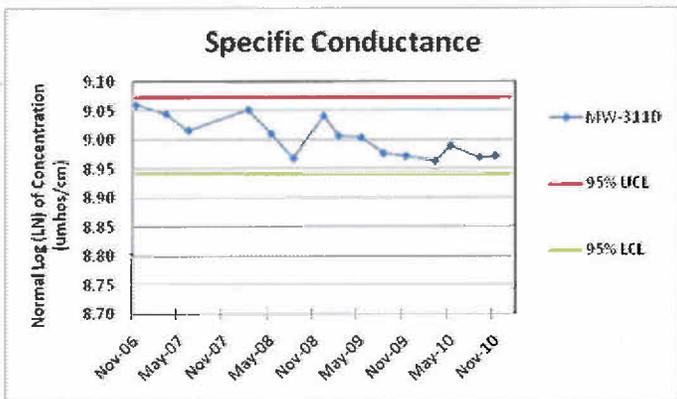
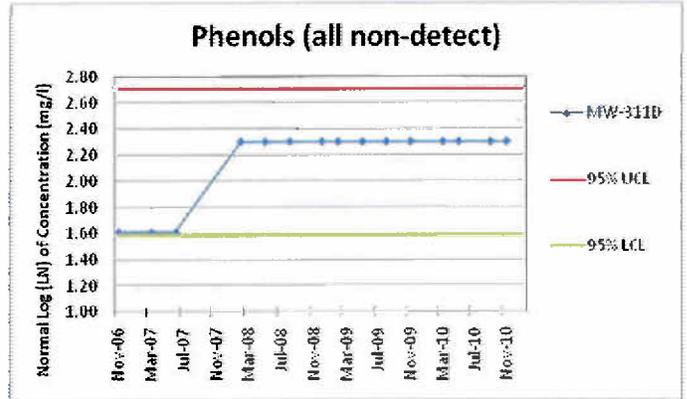
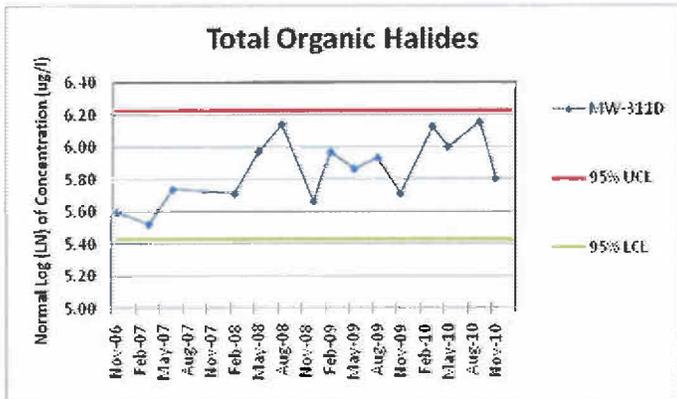
**GROUNDWATER WELL CONTROL CHARTS**  
**MW-310R**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



**GROUNDWATER WELL CONTROL CHARTS**  
**MW-311**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



**GROUNDWATER WELL CONTROL CHARTS**  
**MW-311D**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**



**GROUNDWATER WELL CONTROL CHARTS**  
**MW-312R**  
**WESTERN DISPOSAL AREA**  
**KELLY RUN SANITATION, INC.**  
**FORWARD TOWNSHIP, PENNSYLVANIA**

